SCHOOL OF
CIVIL ENGINEERING

INDIANA
DEPARTMENT OF TRANSPORTATION

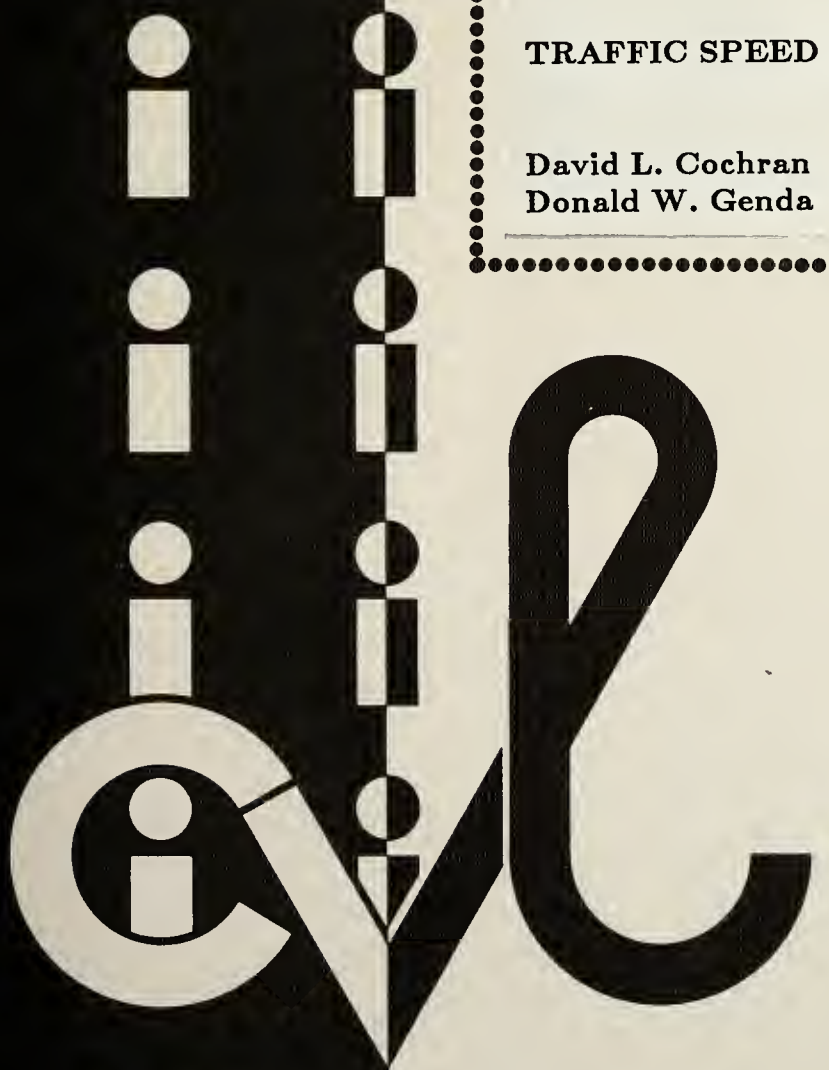
JOINT HIGHWAY RESEARCH PROJECT

JHRP-91/6

Traffic Report

TRAFFIC SPEED REPORT NO. 124

David L. Cochran
Donald W. Genda



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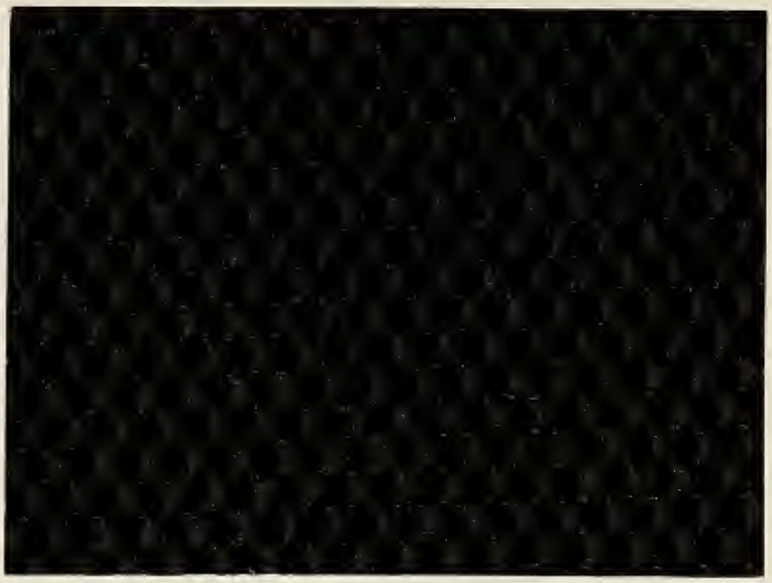

JOINT HIGHWAY RESEARCH PROJECT

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Traffic Report

TRAFFIC SPEED REPORT NO. 124

David L. Cochran
Donald W. Genda

TRAFFIC SPEED REPORT NO. 124

To: Harold L. Michael, Director
Joint Highway Research Project

January 8, 1991

From: David L. Cochran, Traffic Speed Research
Joint Highway Research Project

File: 8 - 3 - 3
Project: C - 36 - 10C

The attached Progress Report No. 124 is the report of the May through August 1990 study of free flow automobile and truck speeds on tangent, level and dry sections of rural interstate, rural four-lane, rural two-lane and urban interstate highways in Indiana. This report was prepared by David L. Cochran. Data were collected by David Cochran with the assistance of Donald W. Genda.

The results of this report show that all types of vehicles, on all types of Indiana highways, had an average free flow speed of 61.1 mph in 1990. This is 0.4 mph higher than the speed reported for all highways in 1989. If the two urban interstates are excluded, the average speed on all types of rural highways in Indiana becomes 61.0 mph in 1990. This also represents an increase of 0.4 mph from 1989. All types of vehicles on rural interstate highways had an average speed of 65.4 mph, which is up by 1.0 mph from 1989 and up 2.1 mph from 1988. This is not unexpected, due to the implementation of the 65 mph speed limit on Indiana rural interstate highways effective June 1, 1987, and the increase in speed limit to 60 mph during 1989 for trucks with a gross weight of 13 tons.

This report includes various charts that graphically illustrate the tabulated results of summer free flow speed monitoring on rural highways since 1981. Table 8, on page 14, summarizes the changes in speed in 1990 from 1989.

Copies of this report will be sent to the Indiana Department of Transportation. Copies of this report are requested for release to the Indiana State Police and other highway safety agencies, which is normal procedure for these reports.

Respectfully submitted,

David L. Cochran, JHRP
Traffic Speed Research

cc: JHRP Board

TRAFFIC SPEED REPORT NO. 124

by

David L. Cochran, JHRP
Traffic Speed Research

and

Donald W. Genda
Traffic Technician

Joint Highway Research Project
Project No.: C - 36 - 10C
File No.: 8 - 3 - 3

Prepared as Part of an Investigation
Conducted by

Joint Highway Research Project
Engineering Experiment Station,
Purdue University,

in Cooperation with the

Indiana Department of Transportation

Purdue University
West Lafayette, Indiana 47907-1284

January 8, 1991

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TRAFFIC SPEED REPORT NO. 124

This report is an analysis of spot speed observations made during the 1990 summer months of May, June, July and August. All observations were made of free-flowing vehicles on level, tangent sections of rural and urban highways under favorable conditions. All observations were made during daylight hours.

This is the tenth report with exclusively summer observations since 1975. From 1976 until 1980 (Traffic Speed Reports #95 through #114), 14 primary and secondary stations, as well as another 14 randomly selected stations, were monitored every quarter in conjunction with the 55 mph speed compliance certification program performed for the Federal Highway Administration. The 55 mph speed compliance certification program, which uses unmanned recording methods, has been conducted separately since 1981.

Fourteen speed monitoring stations were used for the 1990 Traffic Speed Report calculations. These stations are divided into four categories which include: four rural interstate locations, four rural four-lane locations, four rural two-lane locations and two urban interstate locations. These 14 stations are the same as the primary and secondary control stations monitored since 1975 in Indiana. Prior to 1975, only the 12 rural stations were monitored. The locations of the 12 rural stations are essentially the same since 1970 except for stations 4L-32 (formerly number 6 on US 52) and 2L-54 (formerly number 11 on US 31), which changed in 1975.

The speed limit at all the stations is 55 mph, except the rural interstate locations, which were re-posted for 65 mph beginning June 1, 1987. In addition, legislation was passed on April 1, 1988 that reduced the speed limit for trucks with a gross weight of 13 tons, to 55 mph on Indiana rural interstates. New legislation was passed by the Indiana Legislature, on April 1, 1989, which increased the allowable speed limit for trucks with a gross weight of 13 tons to 60 mph, on rural interstate highways in Indiana. The site locations are given in Table 1 and shown in Figure 1.

The vehicles were classified as Indiana or Non-Indiana passenger cars, and light trucks (less than 5000 pounds gross weight) or heavy trucks (equal to or more than 5000 pounds gross weight). Computer analysis was performed for each vehicle classification, and for combined passenger cars and combined trucks.

Sample Size

At each station, a minimum of 200 vehicles in each direction were recorded using the free flow technique at that location. At least 25 of these vehicles, in each direction, were required to be heavy trucks.

Table 1: Monitoring Locations

Rural Interstate Highways		
RI-06	I-65	2.5 miles north of SR 160, mile marker 22.0
RI-12	I-74	4.0 miles west of SR 9, mile marker 108.8
RI-21	I-69	1.6 miles south of SR 18, mile marker 62.0
RI-34	I-65	2.0 miles south of SR 39, mile marker 135.0
4-Lane Highways		
4L-17	US 52	2.0 miles east of US 231
4L-20	US 41	1.0 mile north of SR 2
4L-21	US 31	0.8 mile north of SR 38
4L-32	US 30	3.7 miles west of US 421
2-Lane Highways		
2L-18	SR 28	1.9 miles east of I-69
2L-54	US 231	1.1 miles south of SR 234
2L-79	SR 25	0.7 mile south of Americus
2L-91	SR 43	2.0 miles south of Chalmers
Urban Interstate Highways		
UI-01	I-94	West of Burr St. interchange, mile post 5.9
UI-06	I-65	Just south of White River, mile marker 116.8

Equipment and Field Procedures

The observations for this study were obtained by use of a Kustom Signals, Model H.A.W.K. K-Band radar unit. The burst method, using the on/off switch, was used to record speeds. This method was used to avoid early detection by radar detectors. Speeds were taken from within a van parked on the right shoulder of the road or parked in an access driveway to the road. The observers were equipped with a CB radio to monitor possible radio notification of speed measurement and of police vehicles in the area. When radar speed recording was detected, and subsequently broadcast on the CB radio, speeds were not taken for at least 5 minutes. This problem occurred primarily on interstate highways.

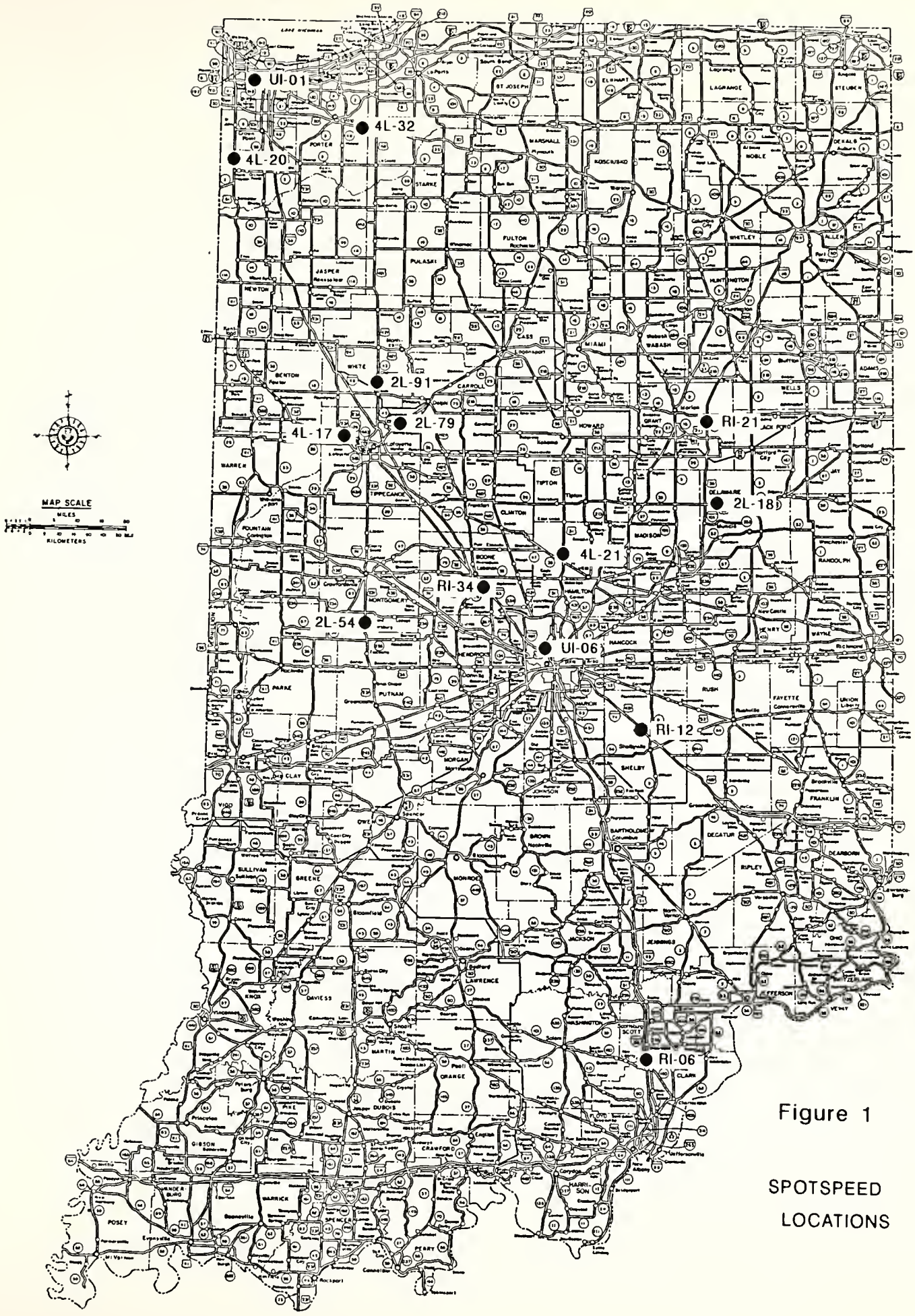


Figure 1

SPOTSPEED LOCATIONS

The accuracy of the radar unit was checked at the beginning and end of each data recording session. The calibration was also confirmed every time the sampling technique was changed, and at other times when deemed necessary.

Results of Analysis

The free flow data collected were analyzed and are summarized for each station in Tables A1 through A14 in the Appendix. Tables A15 through A18 summarize the free flow data by highway classification. Table A19 is the summary for all 14 stations. Table A20 is the summary for all 12 rural highway classifications.

The results of the 1990 free flow data, categorized by highway classification and vehicle type, are shown in Table 2 through Table 5. These results are also illustrated in Figures 2A through 5D for 1981 through 1990.

Table 2: Average And Percentile Speed (MPH)

	Interstate		Other Rural		All	
	Urban	Rural	4-Lane	2-Lane	Sites	Rural
Passenger Cars:						
Indiana	62.5	66.2	59.8	58.7	61.1	60.9
Non-Indiana	63.0	67.3	60.8	58.8	63.9	64.2
All Passenger Cars	62.7	66.7	60.0	58.7	61.8	61.7
15 Percentile (All)	57.1	61.5	54.4	53.8	55.4	55.1
85 Percentile (All)	67.1	70.6	64.7	62.7	67.7	67.8
Trucks:						
Less than 5000 lbs.	61.5	65.0	59.5	58.2	60.9	60.8
5000 lbs. Or more	59.9	62.5	58.4	56.2	59.3	59.2
All Trucks	60.7	63.9	60.8	57.5	60.2	60.2
15 Percentile (All)	55.7	58.6	53.7	52.3	54.2	54.0
85 Percentile (All)	65.0	68.1	63.4	61.9	65.3	65.3
All Vehicles:						
Average	61.9	65.4	59.6	58.1	61.1	61.0
15 Percentile	56.5	59.8	54.1	53.0	54.8	54.6
85 Percentile	66.6	69.8	64.1	62.3	66.7	66.7

SPEED TRENDS BY HIGHWAY TYPE

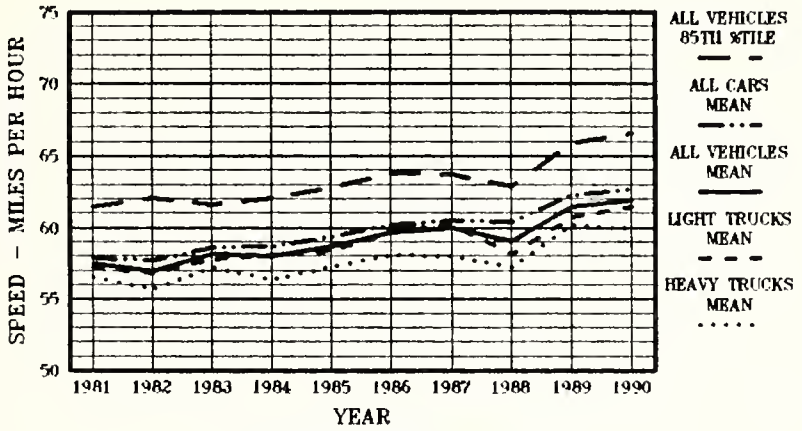


FIGURE 2A: URBAN INTERSTATE

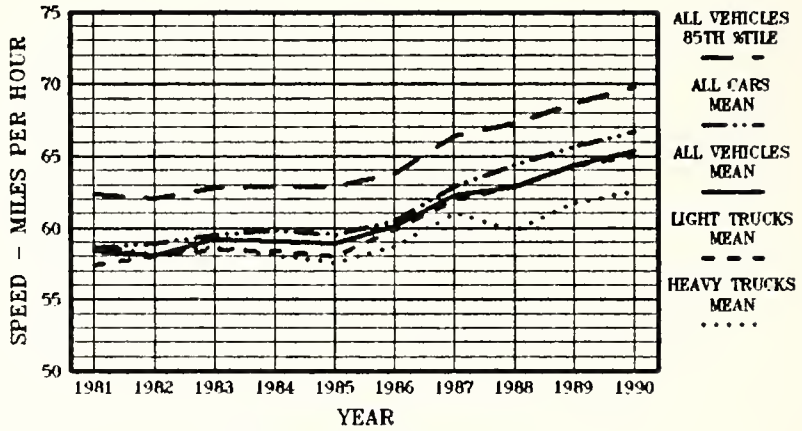


FIGURE 2B: RURAL INTERSTATE

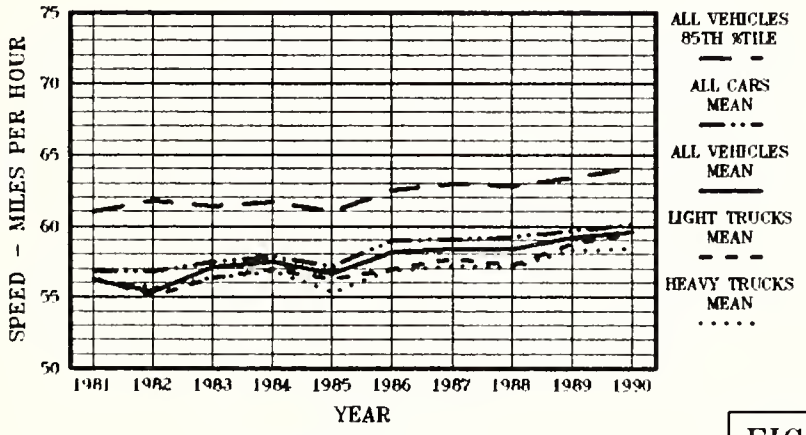


FIGURE 2C: 4 - LANE

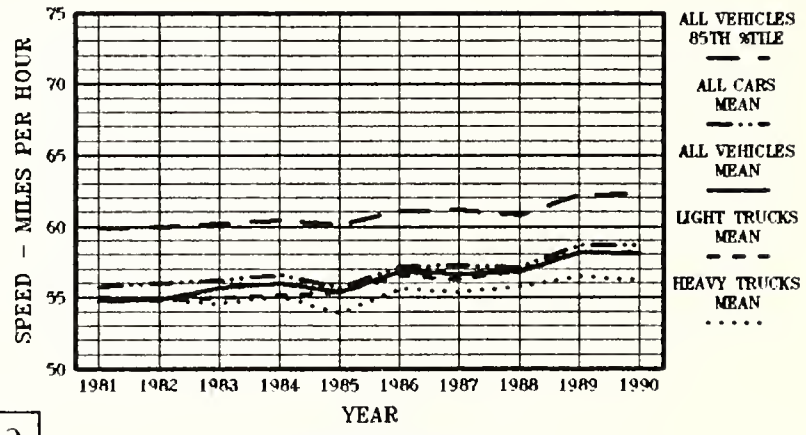


FIGURE 2D: 2 - LANE

FIGURE 2

Table 3: Percent of Vehicles Exceeding 55 MPH

	Interstate		Other Rural		All	
	Urban	Rural	4-Lane	2-Lane	Sites	Rural
Passenger Cars:						
Indiana	94.4	98.3	81.3	76.4	84.7	83.3
Non-Indiana	95.1	98.4	84.9	80.0	92.6	91.9
All Passenger Cars	94.7	98.3	82.1	76.8	87.0	85.6
Trucks:						
Less than 5000 lbs.	89.4	96.2	80.4	68.8	82.2	81.2
5000 lbs or more	87.3	97.2	76.9	58.5	80.1	78.3
All Trucks	88.4	96.6	78.8	65.2	81.3	80.2
All Vehicles:	92.0	97.5	80.6	71.3	84.3	83.0

Table 4: Percent of Vehicles Exceeding 60 MPH

	Interstate		Other Rural		All	
	Urban	Rural	4-Lane	2-Lane	Sites	Rural
Passenger Cars:						
Indiana	64.9	88.3	43.6	31.3	51.2	49.2
Non-Indiana	66.7	94.4	53.4	30.4	71.9	73.4
All Passenger Cars	65.6	91.1	45.8	31.2	57.1	55.5
Trucks:						
Less than 5000 lbs.	56.0	82.4	43.5	31.0	52.0	51.4
5000 lbs. Or more	45.7	70.0	31.4	16.9	41.7	41.0
All Trucks	51.0	77.0	38.0	26.1	47.6	47.1
All Vehicles:	59.4	84.3	42.1	28.8	52.7	51.5

PERCENT GREATER THAN 55 MPH BY HIGHWAY

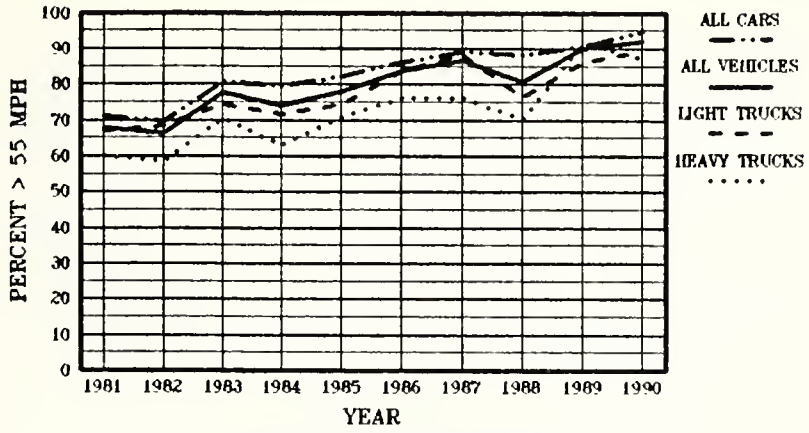


FIGURE 3A: URBAN INTERSTATE

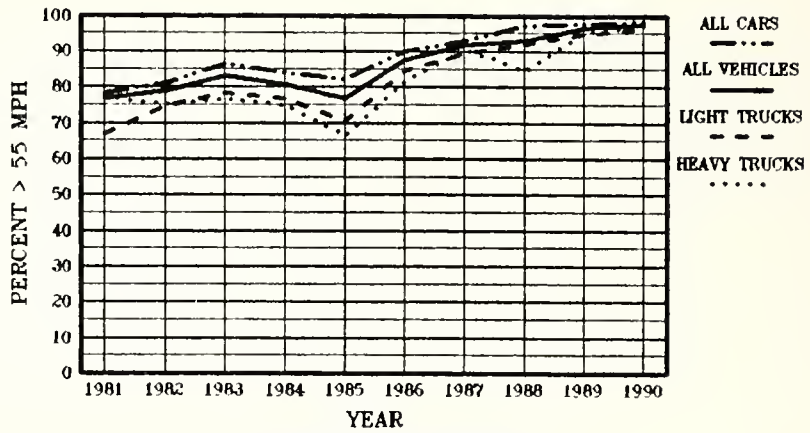


FIGURE 3B: RURAL INTERSTATE

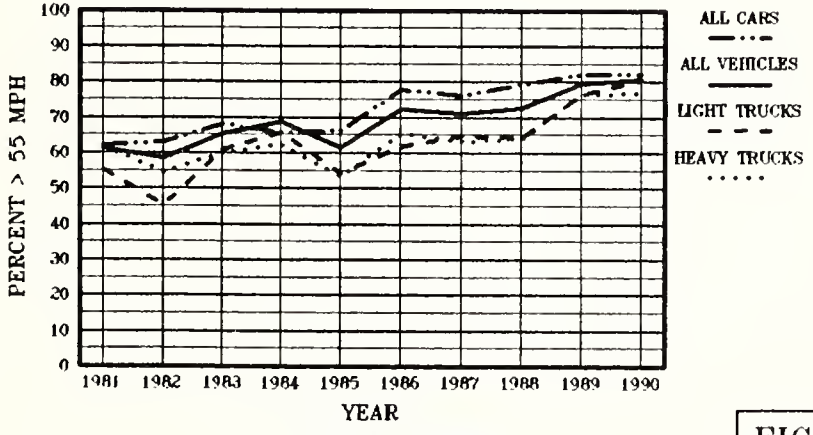


FIGURE 3C: 4 - LANE

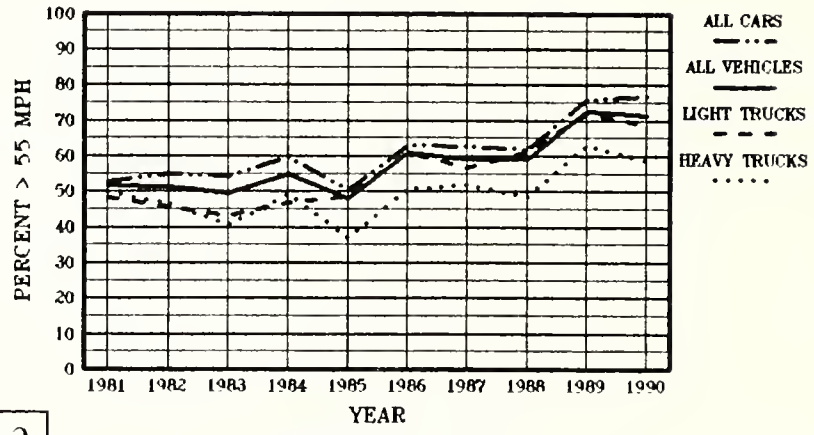


FIGURE 3D: 2 - LANE

FIGURE 3

PERCENT GREATER THAN 60 MPH BY HIGHWAY

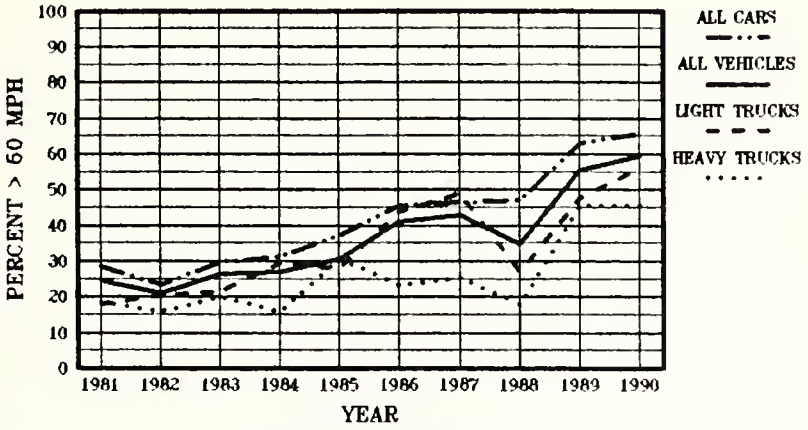


FIGURE 4A: URBAN INTERSTATE

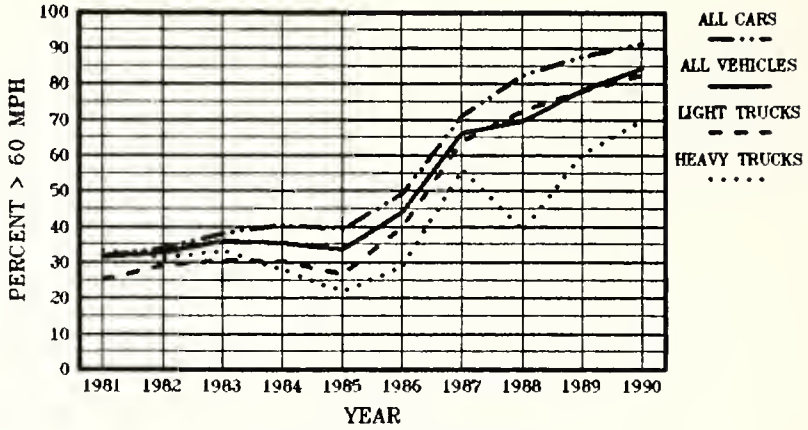


FIGURE 4B: RURAL INTERSTATE

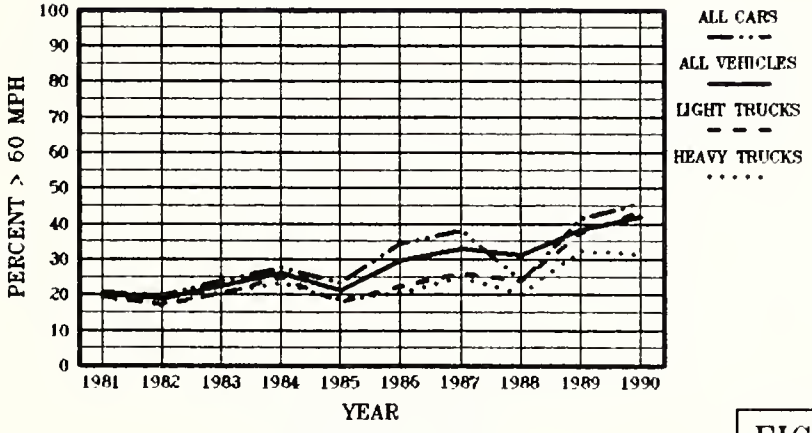


FIGURE 4C: 4 – LANE

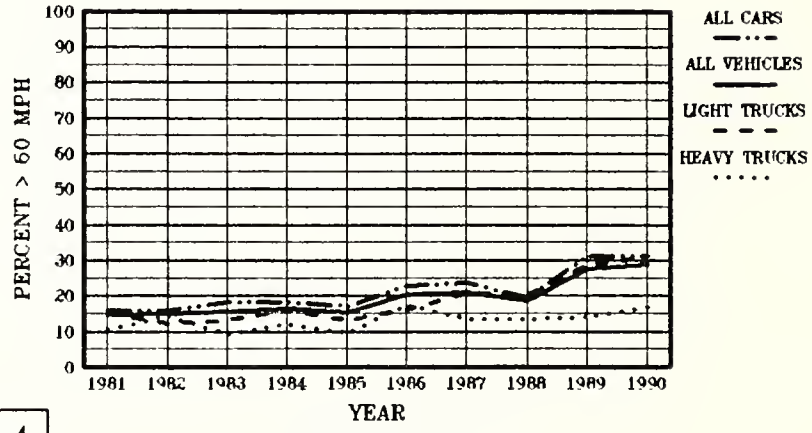


FIGURE 4D: 2 – LANE

FIGURE 4

PERCENT GREATER THAN 65 MPH BY HIGHWAY

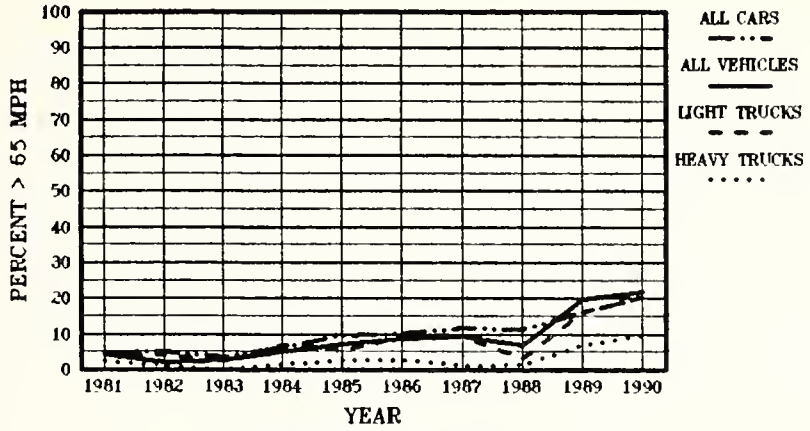


FIGURE 5A: URBAN INTERSTATE

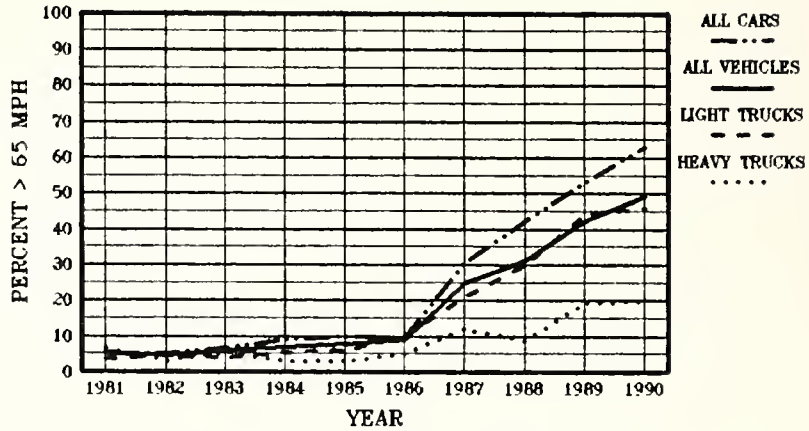


FIGURE 5B: RURAL INTERSTATE

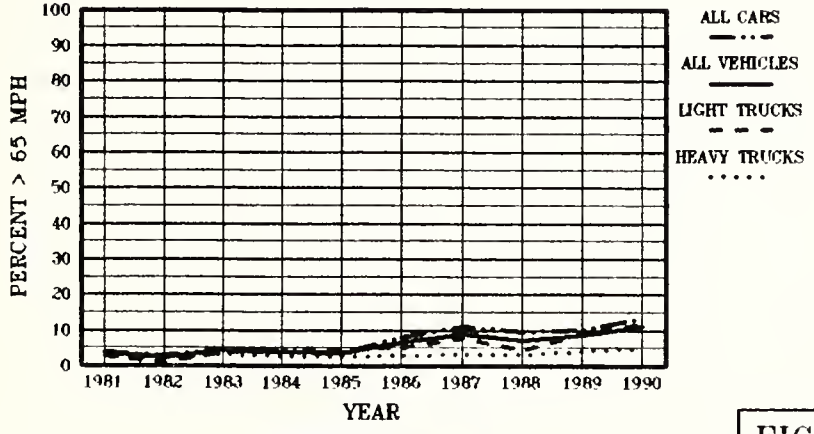


FIGURE 5C: 4 - LANE

FIGURE 5

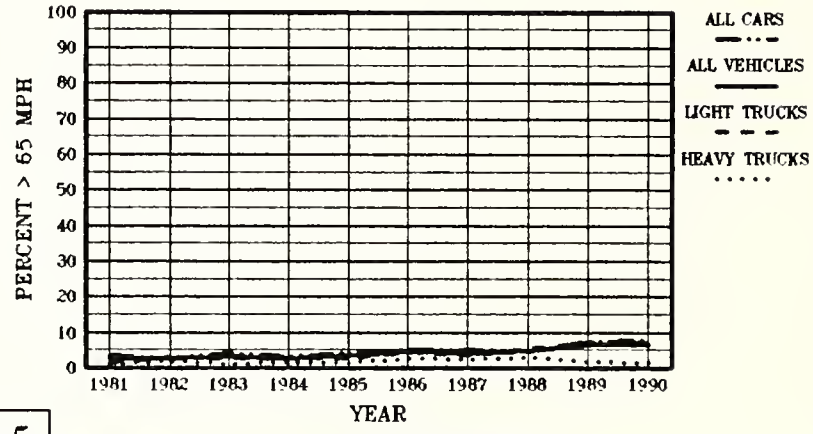


FIGURE 5D: 2 - LANE

Table 5: Percent of Vehicles Exceeding 65 MPH

	Interstate		Other Rural		All	
	Urban	Rural	4-Lane	2-Lane	Sites	Rural
Passenger Cars:						
Indiana	22.6	61.0	13.2	7.9	22.4	22.4
Non-Indiana	32.9	65.1	14.6	7.8	40.3	42.4
All Passenger Cars	26.8	62.9	13.5	7.9	27.5	27.6
Trucks:						
Less than 5000 lbs.	20.3	45.9	11.6	7.2	21.0	21.1
5000 lbs. Or more	9.6	19.7	5.0	1.6	9.3	9.3
All Trucks	15.1	34.5	8.6	5.3	16.1	16.2
All Vehicles:	21.8	49.2	11.2	6.7	22.2	22.2

The results of this study, and similar studies conducted since 1981, are also tabulated in Table 6. All speed values for 1981 through 1990 were calculated by interpolation over 1 mph speed intervals from the raw data. The urban interstate locations were first monitored in 1981.

Figure 6 represents a graphic interpretation of the results from this, and similar studies, since 1981. The speed values plotted in Figure 6 were obtained in the same way as those in Table 6. Only data collected at the 12 rural stations were used to calculate the values in Figure 6.

Table 7 shows the average speeds for all passenger cars, trucks of 5000 pounds or more, and trucks less than 5000 pounds, with and without the two urban interstate stations.

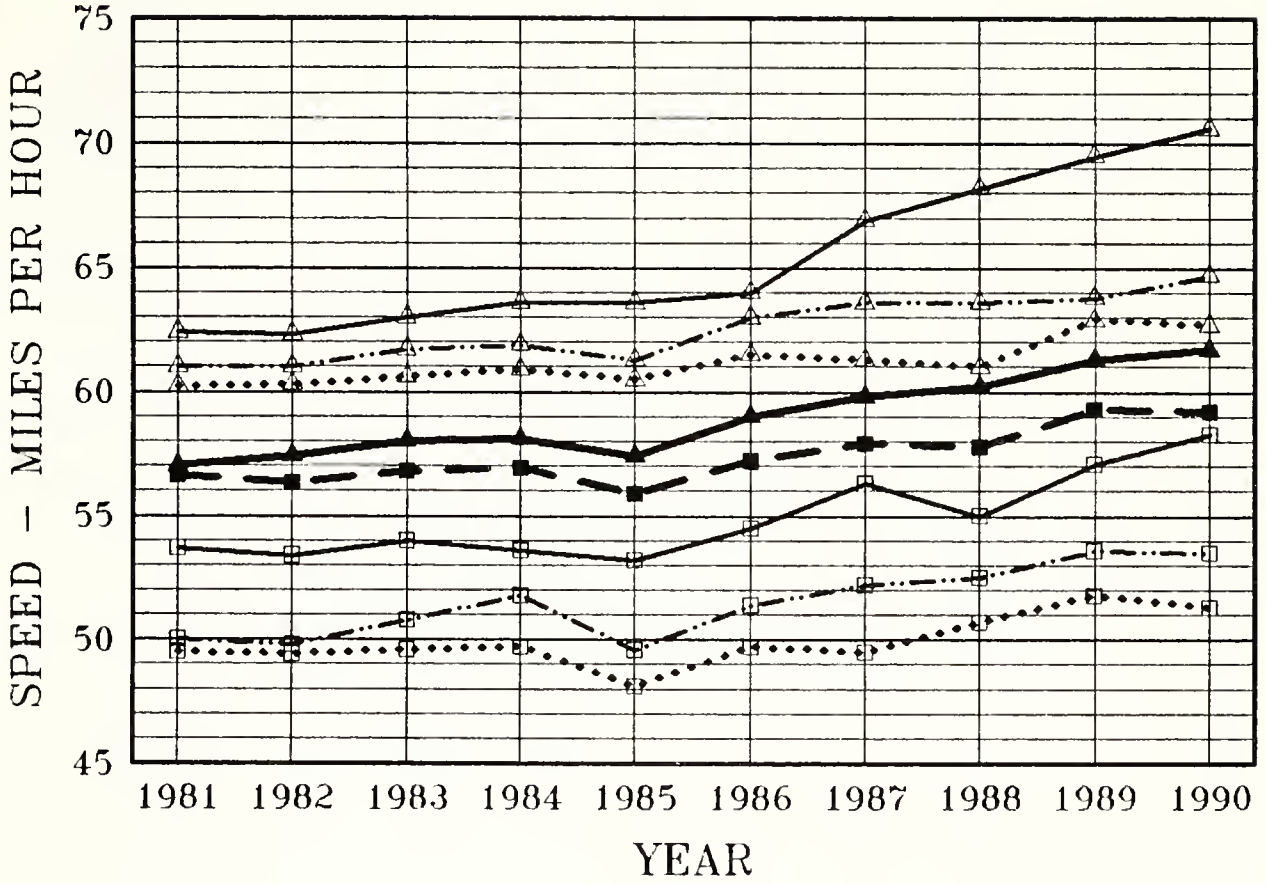
Summary

Since the mean speeds are almost the same for the 12 rural stations (Table 7) as for the 14 urban and rural stations, there is no reason to expect that the results in Figure 6 would change significantly if the urban interstate stations were included in the analysis. However, for consistency in the analysis and historical reporting, data from the urban interstate locations are not included in Figure 6.

Table 6: Summary of Spot Speed Observations on Indiana Highways (Free-Moving Vehicles on Level, Tangent Sections)

	----Passenger Cars----				--------Trucks--------				-Combined-	
	Ind. Mean	Non-Ind. Mean	All Mean	All 85%	Lgt. Mean	Hvy. Mean	All Mean	All 85%	All Mean	All 85%
2-Lane:										
1981	55.7	56.2	55.8	60.2	55.0	54.7	54.8	59.9	54.8	59.9
1982	55.8	57.2	56.0	60.2	54.8	54.9	54.9	59.7	54.9	60.0
1983	56.3	55.8	56.2	60.7	55.0	54.6	54.8	59.3	55.7	60.2
1984	56.5	56.9	56.6	60.9	55.2	55.1	55.2	59.8	56.0	60.4
1985	55.8	55.5	55.7	60.5	55.4	53.9	54.8	55.4	55.4	60.1
1986	57.1	58.2	57.2	61.5	56.5	55.6	56.2	60.4	56.8	61.1
1987	57.3	57.4	57.3	61.6	56.3	55.4	55.9	60.5	56.7	61.2
1988	57.1	57.0	57.1	61.0	56.9	55.8	56.4	60.6	56.8	60.8
1989	58.6	59.3	58.7	62.9	58.2	56.5	57.6	61.5	58.2	62.2
1990	58.7	58.8	58.7	62.7	58.2	56.2	57.5	61.9	58.1	62.3
4-Lane:										
1981	56.5	58.0	56.8	61.1	56.3	56.1	56.2	61.5	56.2	61.0
1982	56.6	57.6	56.8	61.1	55.1	55.7	55.4	61.1	55.4	61.8
1983	57.4	58.0	57.5	61.7	56.4	56.4	56.4	61.7	57.1	61.4
1984	57.7	58.6	57.9	61.9	57.0	56.8	56.9	61.4	57.5	61.7
1985	56.9	58.3	57.2	61.3	56.3	55.4	55.8	60.6	56.7	61.0
1986	58.7	59.7	59.0	63.0	57.0	56.9	57.0	61.3	58.2	62.5
1987	58.6	60.8	59.1	63.6	57.7	57.2	57.5	62.1	58.4	63.0
1988	59.2	59.4	59.2	63.6	57.3	57.1	57.3	61.6	58.4	62.8
1989	59.5	60.4	59.7	63.8	58.8	58.3	58.6	62.9	59.2	63.4
1990	59.8	60.8	60.1	64.7	59.5	58.4	59.0	63.4	59.6	64.1
Rural Interstate:										
1981	57.9	59.6	58.6	62.3	57.4	58.8	58.4	62.9	58.4	62.4
1982	58.9	59.5	58.9	62.2	58.0	58.2	58.1	62.7	58.1	62.1
1983	59.2	60.0	59.5	63.1	58.5	58.7	58.6	62.8	59.2	62.8
1984	59.3	60.5	59.8	63.6	58.4	58.1	58.2	61.8	59.1	62.9
1985	59.2	60.1	59.5	63.6	58.0	57.6	57.7	61.7	58.9	62.9
1986	60.3	60.9	60.5	64.0	59.9	58.7	59.3	62.9	60.1	63.8
1987	62.5	63.4	62.9	66.9	61.9	61.0	61.4	65.3	62.3	66.4
1988	63.9	65.1	64.4	68.2	62.9	59.8	61.3	65.9	62.9	67.3
1989	65.1	66.5	65.7	69.5	64.3	61.8	62.9	67.3	64.4	68.7
1990	66.2	67.3	66.7	70.6	65.0	62.5	63.9	68.1	65.4	69.8
Urban Interstate:										
1981	57.7	58.5	57.9	62.2	57.2	56.5	56.8	61.7	57.5	61.5
1982	57.7	57.8	57.7	61.9	56.8	55.7	56.1	61.2	57.0	62.1
1983	58.7	58.2	58.6	61.9	57.8	57.2	57.4	61.4	58.2	61.6
1984	58.8	58.4	58.7	62.8	58.1	56.4	57.0	60.7	58.0	62.1
1985	59.5	59.3	59.4	63.7	58.4	57.3	57.7	60.9	58.7	62.8
1986	60.1	60.3	60.2	64.3	59.7	58.1	59.0	62.8	59.7	63.8
1987	60.3	61.2	60.5	64.3	60.2	58.0	59.2	62.5	60.0	63.7
1988	60.6	60.1	60.4	64.2	58.2	57.3	57.8	61.1	59.1	62.9
1989	61.6	63.2	62.3	66.9	60.7	60.2	60.4	64.4	61.5	65.9
1990	62.5	63.0	62.7	67.1	61.5	59.9	60.7	65.0	61.9	66.6

STATE OF INDIANA
RURAL SPEED TRENDS



RI CARS 85TH%TILE

4L CARS 85TH%TILE

2L CARS 85TH%TILE

ALL RURAL CARS MEAN

ALL RUR. HV. TRUCK MEAN

RI HVY. TRUCK 15TH%TILE

4L HVY. TRUCK 15TH%TILE

2L HVY. TRUCK 15TH%TILE

FIGURE 6

The 85th percentile, mean, and 15th percentile speed changes on all rural Indiana highways are also illustrated in Figure 6 for cars and heavy trucks. The average speed of cars and heavy trucks have remained nearly the same from 1981 to 1986. Mean and 85th percentile speeds dropped sharply during the summer of 1974 from the summer of 1973 due to the implementation of the 55 mph speed limit.

Table 7: Average Speed (MPH)

	Passenger Cars		Trucks Less Than 5000 lbs.		Trucks 5000 lbs. Or More	
Year	12 Rural Stations	All 14 Stations	12 Rural Stations	All 14 Stations	12 Rural Stations	All 14 Stations
1981	57.0	57.1	56.7	56.3	56.1	56.6
1982	57.2	57.3	55.8	55.9	56.4	56.3
1983	57.8	57.9	56.5	56.6	56.7	56.8
1984	58.1	58.3	56.7	56.9	56.9	56.8
1985	57.4	57.7	56.4	56.7	55.9	56.2
1986	59.0	59.2	57.7	58.0	57.2	57.3
1987	59.8	59.9	58.4	58.7	57.9	57.9
1988	60.2	60.2	59.0	58.8	57.8	57.7
1989	61.3	61.4	60.1	60.2	59.3	59.4
1990	61.7	61.9	60.9	60.9	59.2	59.3

The speeds varied slightly, up and down, from 1975 through 1978; however, some stabilization was realized from 1981 through 1982 (Figure 6). Speeds appeared to increase slightly from 1982 to 1984 above previous levels. A decrease in speeds was observed in 1985 for all categories, except for the 85th percentile speed for passenger cars on rural interstates, where no change occurred. However, all categories appeared to increase sharply in 1986 and 1987, except for a slight decrease in the two-lane catagory for passenger cars and heavy trucks.

Most categories during 1988 also increased (Figure 6), except for the 85th percentile of cars on two-lane highways and the 15th percentile of heavy trucks on rural interstates. Alternately, the 85th percentile of four-lane cars remained virtually the same in 1988 from 1987. During 1989, all speed categories for cars and heavy trucks increased from 1988 levels (Figure 6) on all rural highways, except for cars on four-lane highways which have remained essentially constant since 1987.

During 1990, the 85th percentile speed of cars increased by 1.1 mph on rural interstates and 0.9 mph on four-lane highways, while the 85th percentile of cars on two-lane highways decreased slightly by 0.2 mph (Figure 6). The 15th percentile of large trucks decreased by 0.1 mph on four-lane highways and 0.5 mph on two-lane roads, but increased by 1.2 mph on rural interstate highways.

The mean speed of passenger cars, on all types of rural highways, increased slightly in 1990 from 1989 by 0.4 mph (Figure 6). The mean speed of heavy trucks on all types of rural highways decreased by 0.1 mph (Figure 6). The mean speed of light trucks on all types of rural highways increased by 0.7 mph in 1990 (Table 8).

Table 8: Summary of Changes in Speed (MPH) in 1990 from 1989

Speed Category:	All Cars	L Trucks	H Trucks	All Veh.
Mean (Rural Interstate)	+ 1.0	+ 0.7	+ 0.7	+ 1.0
Mean (4-Lane)	+ 0.4	+ 0.7	+ 0.1	+ 0.4
Mean (2-Lane)	0.0	0.0	- 0.3	- 0.1
Mean (All Rural)	+ 0.4	+ 0.7	- 0.1	+ 0.4
15th % (All Rural)	+ 0.1	+ 0.1	- 0.5	+ 0.1
Median (All Rural)	+ 0.3	+ 0.8	+ 0.2	+ 0.4
85th % (All Rural)	+ 1.1	+ 0.8	+ 0.1	+ 0.8
Mean (Urban Interstate)	+ 0.4	+ 0.8	- 0.3	+ 0.4
Mean (All-14)	+ 0.5	+ 0.7	- 0.1	+ 0.4
15th % (All-14)	+ 0.2	+ 0.2	- 0.5	0.0
Median (All-14)	+ 0.4	+ 0.8	+ 0.1	+ 0.5
85th % (All-14)	+ 1.0	+ 0.8	+ 0.1	+ 0.8

A tabulation of change in speed trends during 1990 from 1989 is listed in Table 8. Figures 7A through 7D graphically represent these changes by vehicle type and highway classification. All vehicle types showed increases in mean speed on rural interstate highways in 1990 from 1989 (Table 8). Passenger cars registered the largest increase at 1.0 mph, while light trucks and heavy trucks increased by 0.7 mph each.

SPEED TRENDS BY VEHICLE TYPE

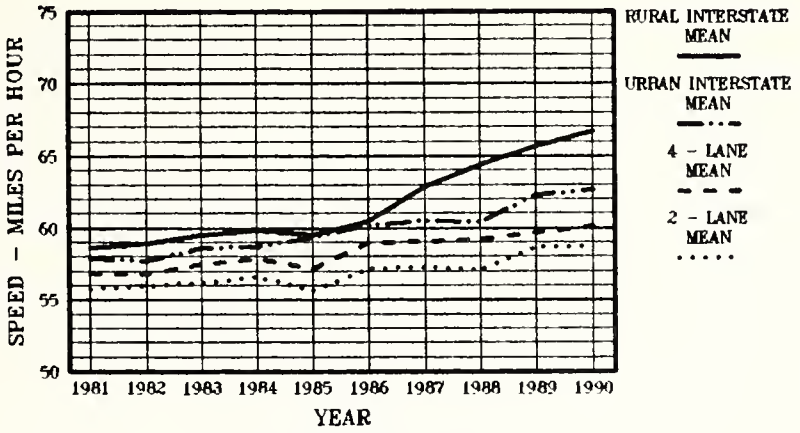


FIGURE 7A: ALL CARS

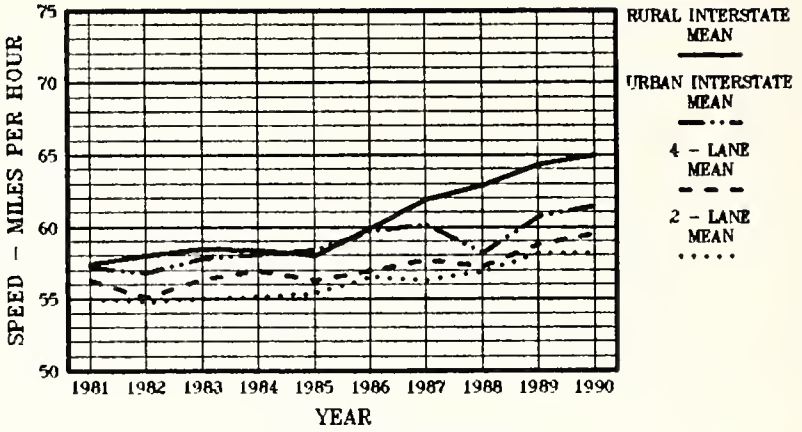


FIGURE 7B: LIGHT TRUCKS

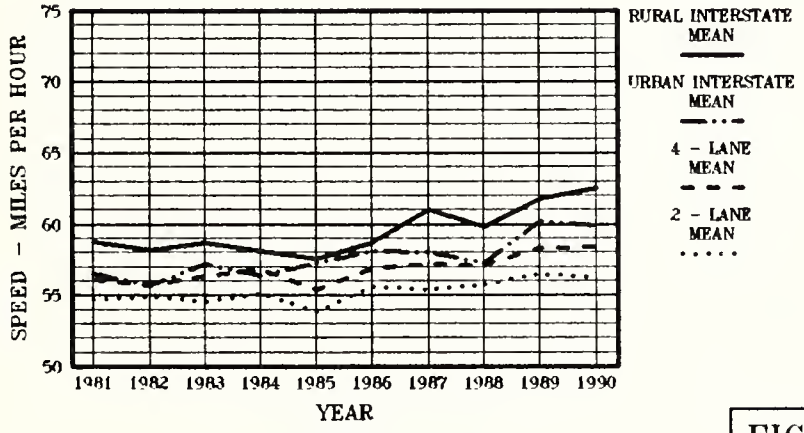


FIGURE 7C: HEAVY TRUCKS

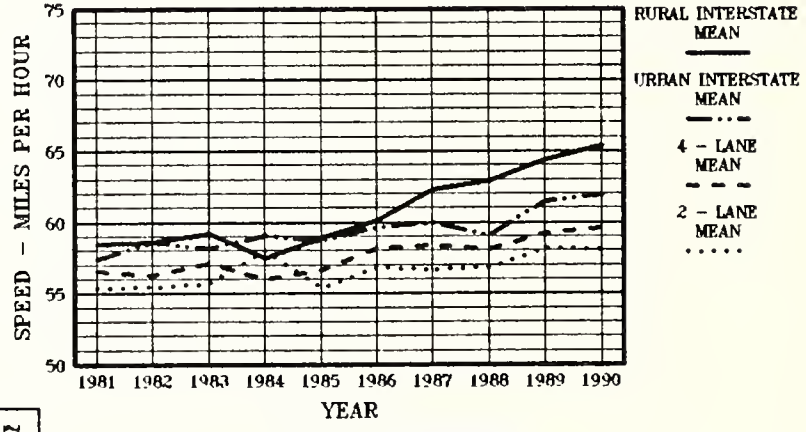


FIGURE 7D: ALL VEHICLES

FIGURE 7

The average speed of passenger cars on all types of rural Indiana highways increased (Table 8) by 0.4 mph in 1990 from 1989. The 85th percentile speed of passenger cars on all types of rural Indiana highways also increased slightly by 1.1 mph from 1989.

The average speed of light trucks (less than 5000 pounds) on all types of rural Indiana highways increased (Table 8) by 0.7 mph in 1990 from 1989. The 85th percentile speed of light trucks on all types of rural Indiana highways increased by 0.8 mph during 1990.

The average speed of heavy trucks (5000 pounds or more) on all types of rural Indiana highways decreased (Table 8) by 0.1 mph in 1990 from 1989. The 85th percentile speed of heavy trucks on all types of rural Indiana highways increased by 0.1 mph from 1989.

The mean speed for all vehicles on all types of rural Indiana highways increased in 1990 from 1989 levels by 0.4 mph (Table 8). If the urban interstate locations are included in the analysis, the mean speed for all types of vehicles on all types of Indiana highways also increased by 0.4 mph in 1990 from 1989 (Table 8). Changes in mean speed on urban interstate highways in Indiana from 1981 through 1989 are illustrated in Figure 2A.

The 85th percentile speed for all vehicles on all types of rural Indiana highways increased in 1990 from 1989 levels by 0.8 mph (Table 8). If the urban interstate locations are included in the analysis, the 85th percentile speed for all types of vehicles on all types of Indiana highways increased by 0.4 mph in 1990 from 1989. Changes in 85th percentile speed on urban interstate highways are also represented in Figure 2A.

A summary of changes in percent of vehicles exceeding 55, 60 and 65 mph in 1990 from 1989 is tabulated in Table 9 and graphically illustrated in Figures 8A through 10C. The largest increase in percent greater than speed during 1990 was observed by passenger cars on Indiana rural interstate highways at 9.7% > 65 mph (Table 9). The next highest percent greater than speed was also on rural interstate highways in the heavy truck class at 9.6% > 60 mph (Table 9). The largest increase for light trucks on rural interstate highways was 4.4% > 60 mph.

For rural four-lane highways, the largest increase in percent greater than speed in 1990 was noticed at 6.1% > 60 mph by light trucks (Table 9). Passenger cars increased by 4.4% > 60 mph, while light trucks also increased by 4.0% > 55 mph.

For rural two-lane highways, heavy trucks registered the largest increase in percent greater than speed at 2.8% > 60 mph (Table 9), followed by light trucks at 2.1% > 60 mph. The largest increase for passenger cars was at 0.9% > 55 mph in 1990.

Table 9: Summary of Changes in Percent Greater Than Speed in 1990 from 1989

		% > 55	% > 60	% > 65
Urban Interstate	All Cars	+ 4.0	+ 2.7	+ 0.3
	Light Trucks	+ 3.4	+ 8.3	+ 4.2
	Heavy Trucks	- 4.1	+ 0.2	+ 2.8
	All Vehicles	+ 2.1	+ 3.8	+ 2.1
Rural Interstate	All Cars	+ 0.4	+ 3.4	+ 9.7
	Light Trucks	+ 1.3	+ 4.4	+ 1.9
	Heavy Trucks	+ 2.2	+ 9.6	+ 0.2
	All Vehicles	+ 1.2	+ 6.0	+ 7.0
Rural 4-Lane	All Cars	0.0	+ 4.4	+ 3.2
	Light Trucks	+ 4.0	+ 6.1	+ 2.5
	Heavy Trucks	+ 0.3	- 1.0	+ 0.8
	All Vehicles	+ 1.2	+ 3.6	+ 2.5
Rural 2-Lane	All Cars	+ 0.9	+ 0.1	+ 0.3
	Light Trucks	- 3.2	+ 2.1	0.0
	Heavy Trucks	- 4.5	+ 2.8	- 0.3
	All Vehicles	- 1.3	+ 1.2	+ 0.2
All Rural	All Cars	+ 0.4	+ 2.5	+ 4.3
	Light Trucks	+ 1.2	+ 5.7	+ 2.8
	Heavy Trucks	- 2.3	+ 0.8	- 0.6
	All Vehicles	+ 0.1	+ 4.4	+ 3.2
All Stations	All Cars	+ 1.0	+ 2.6	+ 3.7
	Light Trucks	+ 1.5	+ 6.1	+ 3.0
	Heavy Trucks	- 2.2	+ 1.5	- 0.1
	All Vehicles	+ 0.4	+ 3.5	+ 3.0

Table 9 indicates that there was a slight increase of 0.1 percent of all vehicles exceeding 55 mph on all rural highways in Indiana during 1990 from 1989. In addition, 4.4 percent more of all vehicles are exceeding 60 mph, while 3.2 percent more are exceeding 65 mph on all rural highways in 1990 from 1989. If the urban interstate highways are included in the analysis, Table 9 shows that there was an increase of 0.4 percent of all vehicles exceeding 55 mph, 3.5 percent exceeding 60 mph and 3.0 percent exceeding 65 mph during 1990.

PERCENT GREATER THAN 55 MPH BY VEHICLE

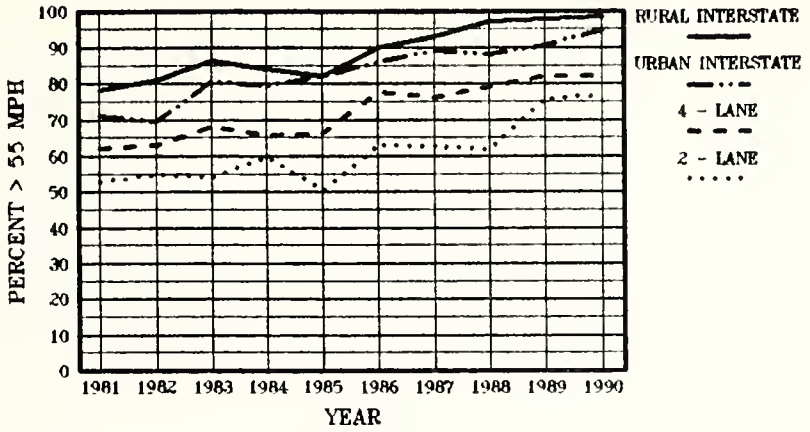


FIGURE 8A: ALL CARS

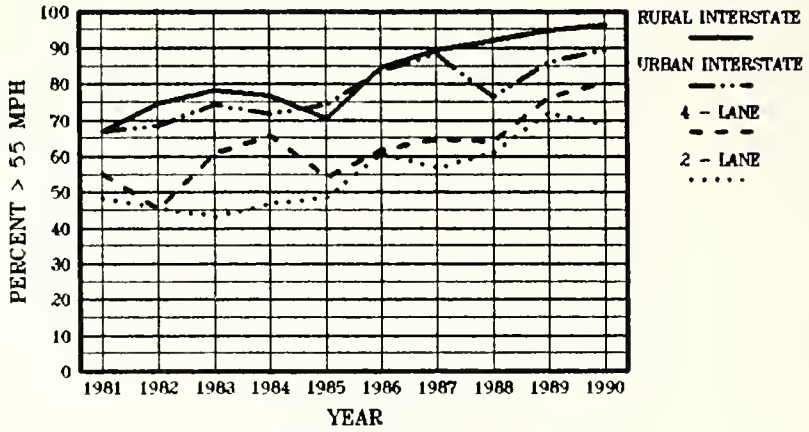


FIGURE 8B: LIGHT TRUCKS

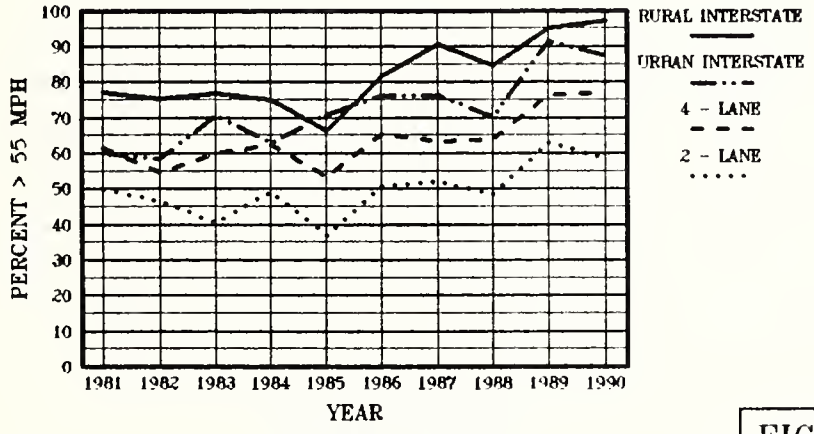


FIGURE 8C: HEAVY TRUCKS

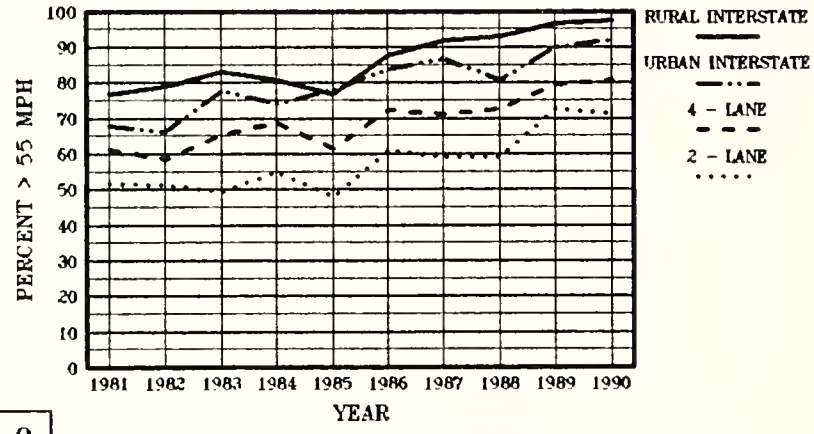


FIGURE 8D: ALL VEHICLES

FIGURE 8

PERCENT GREATER THAN 60 MPH BY VEHICLE

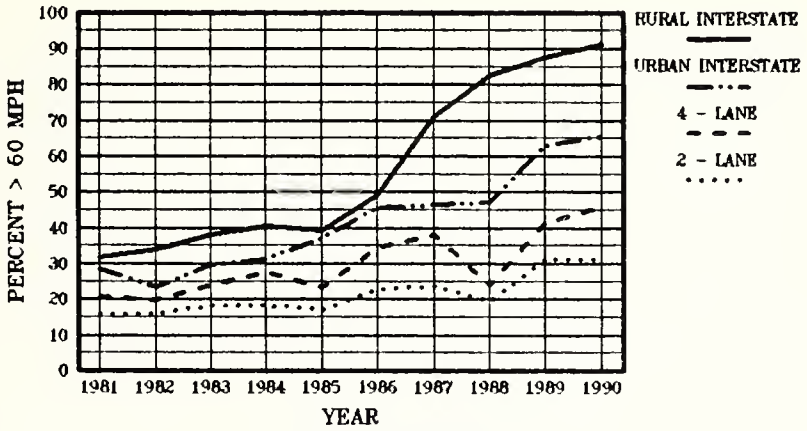


FIGURE 9A: ALL CARS

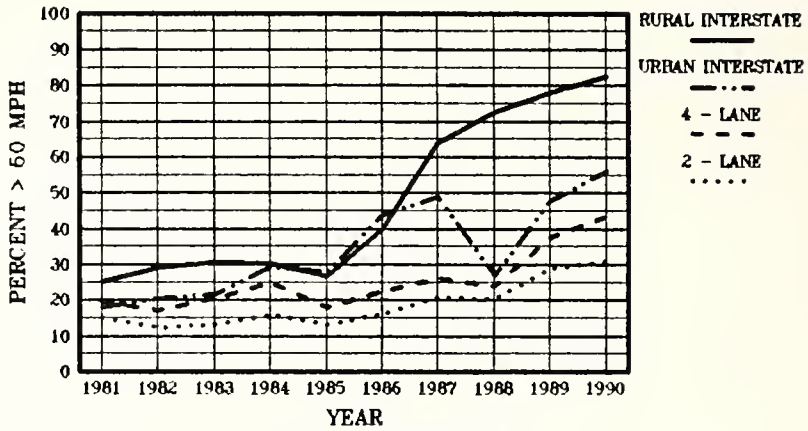


FIGURE 9B: LIGHT TRUCKS

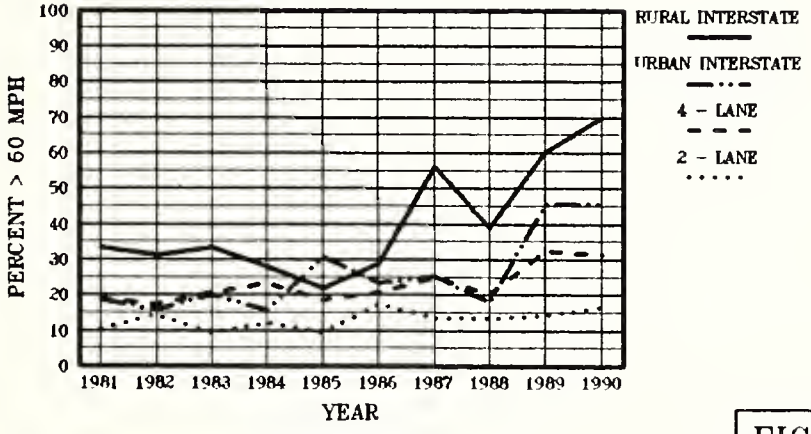


FIGURE 9C: HEAVY TRUCKS

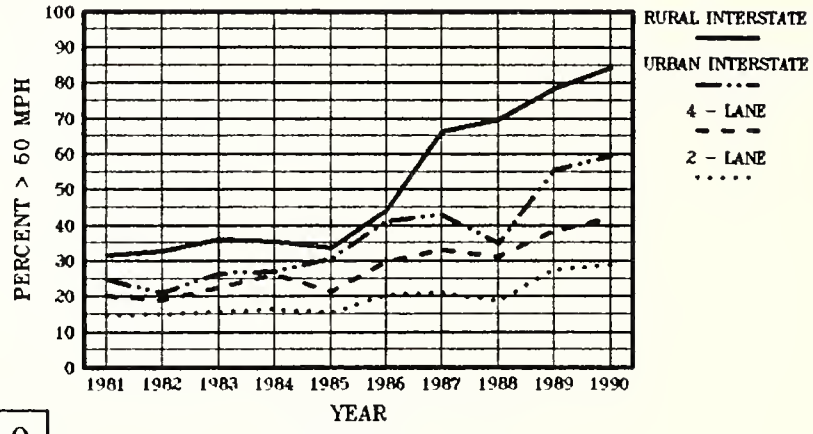


FIGURE 9D: ALL VEHICLES

FIGURE 9

PERCENT GREATER THAN 65 MPH BY VEHICLE

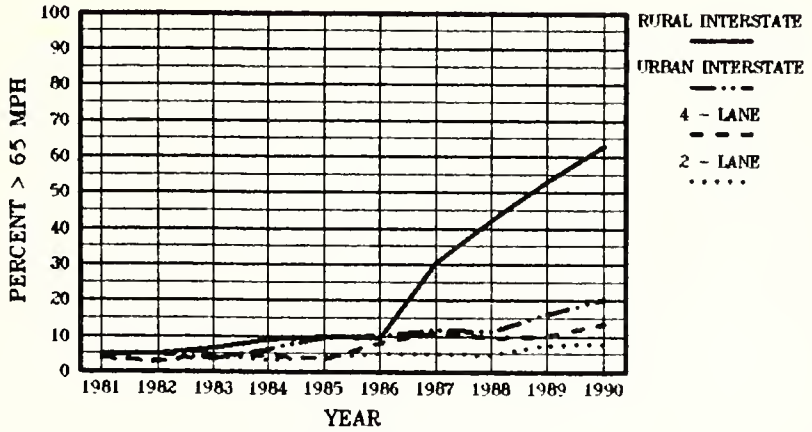


FIGURE 10A: ALL CARS

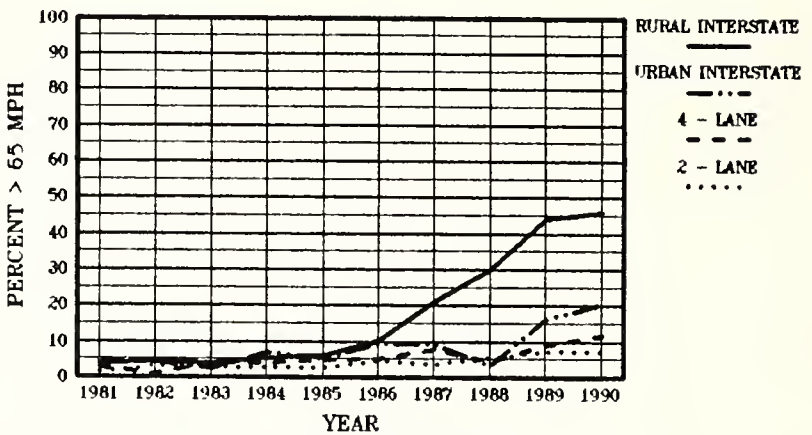


FIGURE 10B: LIGHT TRUCKS

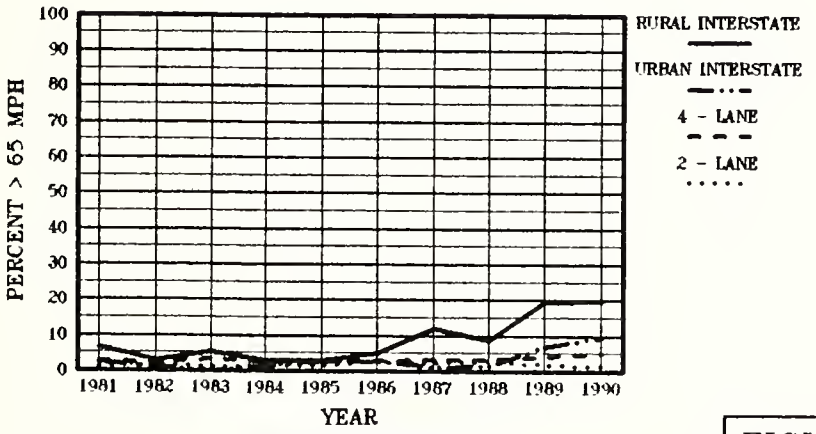


FIGURE 10C: HEAVY TRUCKS

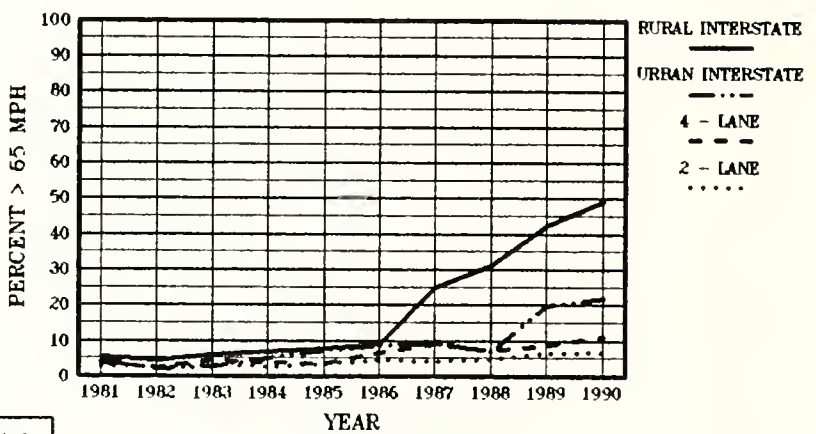


FIGURE 10D: ALL VEHICLES

FIGURE 10

Conclusions

The mean speed on Indiana rural interstate highways increased in all vehicle classes during 1990 from 1989 (Figure 2B). The mean speed of passenger cars increased the greatest by 1.0 mph, but was followed closely by light trucks and heavy trucks at 0.7 mph each. The average speed for all vehicles on Indiana rural interstates increased by 1.0 mph to 65.4 mph in 1990, while the 85th percentile speed increased by 1.1 mph to 69.8 mph.

The mean speed for all vehicles on Indiana four-lane highways increased slightly by 0.4 mph during 1990 to 59.6 mph (Figure 2C). The 85th percentile speed also increased slightly to 64.1 mph.

The mean speed for all vehicles on Indiana two-lane highways decreased slightly during 1990 by 0.1 mph to 58.1 mph (Figure 2D). The 85th percentile speed increased by 0.1 mph to 62.3 mph.

The mean speed for all vehicles on Indiana urban interstate highways has also increased from 1989 levels during 1990 by 0.4 mph to 61.9 mph (Figure 2A). The 85th percentile speed increased by 0.7 mph to 66.6 mph during 1990.

The mean speed for all vehicles on all types of rural Indiana highways increased in 1990 from 1989 levels by 0.4 mph to 61.0 mph. If the urban interstate locations are included in the analysis, the mean speed for all types of vehicles on all types of Indiana highways also increased by 0.4 mph to 61.1 mph.

The 85th percentile speed for all vehicles on all types of rural Indiana highways increased in 1990 from 1989 by 0.8 mph to 66.7 mph. If the urban interstate locations are included in the analysis, the 85th percentile speed for all types of vehicles on all types of Indiana highways increased by 0.4 mph to 66.7 mph.

Appendix A

Speed Data (Tables A1 to A20)

TABLE A1:SPEED DATA

STATION: UI-01 HIGHWAY: I-94 LOCATION: WEST OF BURR ST. INTERCHANGE, MILE MARKER 5.9

NO. OF LANES: 6 TYPE OF SURFACE: ASPHALT WEATHER: CLOUDY, BRIGHT

THIS OBSERVATION
DATE: 5/9/90
TIME: 10:35 AM

LAST PREVIOUS OBSERVATION (SPEED REPORT NO. 123)
DATE: 6/5/89
TIME: 11:27 AM

	PASSENGER CARS						TRUCKS					
	ALL		INDIANA		NON-INDIANA		ALL		<5000 LBS.		>5000 LBS.	
OBSERVATION	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT
NUMBER OF VEHICLES	244	265	76	113	168	152	230	203	97	92	133	111
AVE. SPEED (MPH)	62.37	61.99	60.49	61.23	63.22	62.56	60.53	60.67	60.66	60.74	60.44	60.60
STANDARD DEVIATION	4.850	4.818	4.854	4.730	4.616	4.820	4.641	4.654	5.875	5.297	3.500	4.068
24 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
29 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
34 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
39 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
PERCENT 44 MPH	0.	0.4	0.	0.9	0.	0.	0.	0.5	0.	0.	0.	0.9
OF 49 MPH	0.	1.1	0.	1.8	0.	0.7	2.2	2.0	5.2	2.2	0.	1.8
VEHICLES 54 MPH	3.7	4.9	6.6	6.2	2.4	3.9	8.3	5.9	12.4	7.6	5.3	4.5
TRAVELING 59 MPH	29.9	32.1	51.3	37.2	20.2	28.3	40.9	39.9	40.2	47.8	41.4	33.3
LESS THAN 64 MPH	68.4	69.8	82.9	76.1	61.9	65.1	83.5	83.3	75.3	79.3	89.5	86.5
OR 69 MPH	92.2	96.6	93.4	98.2	91.7	95.4	97.0	97.0	92.8	93.5	100.0	100.0
EQUAL TO 74 MPH	98.8	98.5	98.7	98.2	98.8	98.7	99.6	100.0	99.0	100.0	100.0	100.0
79 MPH	100.0	100.0	100.0	100.0	100.0	100.0	99.6	100.0	99.0	100.0	100.0	100.0
84 MPH	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
89 MPH	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
DIRECTION: EB												
# OF VEHICLES	126	132	40	56	86	76	112	102	44	43	68	59
AVERAGE SPEED	62.10	62.32	59.78	61.46	63.17	62.95	60.33	60.75	61.29	60.28	59.71	61.08
DIRECTION: WB												
# OF VEHICLES	118	133	36	57	82	76	118	101	53	49	65	52
AVERAGE SPEED	62.66	61.67	61.28	61.00	63.27	62.17	60.72	60.58	60.13	61.14	61.20	60.06

TABLE A2:SPEED DATA

STATION: UI-06 HIGHWAY: I-65 LOCATION: SOUTH OF WHITE RIVER BRIDGE, MILE POST 116.8

NO. OF LANES: 6 TYPE OF SURFACE: ASPHALT WEATHER: CLOUDY, BRIGHT

THIS OBSERVATION
DATE: 6/15/90
TIME: 11:28 AM

LAST PREVIOUS OBSERVATION (SPEED REPORT NO. 123)
DATE: 5/16/89
TIME: 12:05 PM

	PASSENGER CARS						TRUCKS					
	ALL		INDIANA		NON-INDIANA		ALL		<5000 LBS.		>5000 LBS.	
OBSERVATION	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT
NUMBER OF VEHICLES	281	279	223	206	58	73	185	201	96	115	89	86
AVE. SPEED (MPH)	62.21	63.36	62.01	63.21	62.95	63.78	60.32	60.77	60.78	62.03	59.82	59.08
STANDARD DEVIATION	5.666	5.160	5.542	5.236	6.114	4.950	4.276	5.005	4.715	4.811	3.707	4.783
24 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
29 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
34 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
39 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
PERCENT 44 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
OF 49 MPH	0.7	0.	0.9	0.	0.	0.	0.5	1.0	1.0	0.	0.	2.3
VEHICLES 54 MPH	8.5	1.8	9.0	1.9	6.9	1.4	7.6	8.5	9.4	5.2	5.6	12.8
TRAVELING 59 MPH	30.6	23.3	30.9	24.3	29.3	20.5	44.3	40.3	41.7	31.3	47.2	52.3
LESS THAN 64 MPH	65.5	64.9	65.9	67.0	63.8	58.9	81.6	78.1	76.0	71.3	87.6	87.2
OR 69 MPH	92.9	89.2	93.7	89.3	89.7	89.0	98.4	94.5	97.9	91.3	98.9	98.8
EQUAL TO 74 MPH	98.2	97.5	98.7	98.1	96.6	95.9	100.0	100.0	100.0	100.0	100.0	100.0
79 MPH	98.9	98.9	99.1	98.5	98.3	100.0	100.0	100.0	100.0	100.0	100.0	100.0
84 MPH	99.3	99.6	99.6	99.5	98.3	100.0	100.0	100.0	100.0	100.0	100.0	100.0
89 MPH	100.0	99.6	100.0	99.5	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
DIRECTION: NB												
# OF VEHICLES	134	147	100	103	34	44	101	93	48	54	53	39
AVERAGE SPEED	63.37	64.11	62.90	63.87	64.76	64.66	60.60	62.10	61.29	63.20	59.98	60.56
DIRECTION: SB												
# OF VEHICLES	147	132	123	103	24	29	84	108	48	61	36	47
AVERAGE SPEED	61.14	62.52	61.29	62.54	60.38	62.45	59.98	59.62	60.27	60.98	59.58	57.85

TABLE A3:SPEED DATA

STATION: RI-06 HIGHWAY: I-65 LOCATION: 3.1 MILES SOUTH OF SR 160, MILE POST 11.4
(TEMPORARY LOCATION DUE TO CONSTRUCTION)

NO. OF LANES: 4 TYPE OF SURFACE: ASPHALT WEATHER: BRIGHT, HAZY

THIS OBSERVATION
DATE: 5/22/90
TIME: 12:53 PM

LAST PREVIOUS OBSERVATION (SPEED REPORT NO. 123)
DATE: 8/15/89
TIME: 2:52 PM

	PASSENGER CARS						TRUCKS					
	ALL		INDIANA		NON-INDIANA		ALL		<5000 LBS.		>5000 LBS.	
OBSERVATION	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT
NUMBER OF VEHICLES	216	241	90	147	126	94	250	220	102	116	148	104
AVE. SPEED (MPH)	66.27	66.42	65.71	65.82	66.67	67.35	63.58	63.40	64.69	64.25	62.81	62.46
STANDARD DEVIATION	4.709	5.098	4.169	4.942	5.039	5.225	5.134	4.760	5.506	5.263	4.730	3.944
24 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
29 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
34 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
39 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
PERCENT 44 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
OF 49 MPH	0.	0.	0.	0.	0.	0.	0.4	0.	0.	0.	0.7	0.
VEHICLES 54 MPH	0.9	2.1	1.1	1.4	0.8	3.2	2.4	1.8	3.9	2.6	1.4	1.0
TRAVELING 59 MPH	6.0	7.9	8.9	8.8	4.0	6.4	21.6	25.5	18.6	22.4	23.6	28.8
LESS THAN 64 MPH	34.3	30.3	34.4	34.7	34.1	23.4	55.6	58.2	43.1	49.1	64.2	68.3
OR 69 MPH	78.2	72.6	83.3	78.9	74.6	62.8	86.8	91.8	78.4	86.2	92.6	98.1
EQUAL TO 74 MPH	94.9	94.6	98.9	96.6	92.1	91.5	98.8	98.6	99.0	98.3	98.6	99.0
79 MPH	99.1	99.6	100.0	100.0	98.4	98.9	100.0	99.5	100.0	99.1	100.0	100.0
84 MPH	99.5	100.0	100.0	100.0	99.2	100.0	100.0	100.0	100.0	100.0	100.0	100.0
89 MPH	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
DIRECTION: NB												
# OF VEHICLES	109	134	61	95	48	39	128	99	56	57	72	42
AVERAGE SPEED	65.76	65.55	65.38	65.14	66.25	66.56	62.66	62.14	64.16	63.47	61.50	60.33
DIRECTION: SB												
# OF VEHICLES	107	107	29	52	78	55	122	121	46	59	76	62
AVERAGE SPEED	66.79	67.50	66.41	67.08	66.92	67.91	64.53	64.44	65.33	65.00	64.05	63.90

TABLE A4:SPEED DATA

STATION: RI-12 HIGHWAY: I-74 LOCATION: 4.0 MILES WEST OF SR 9, MILE MARKER 108.8

NO. OF LANES: 4 TYPE OF SURFACE: ASPHALT WEATHER: CLOUDY, BRIGHT

THIS OBSERVATION
DATE: 6/29/90
TIME: 11:39 AM

LAST PREVIOUS OBSERVATION (SPEED REPORT NO. 123)
DATE: 7/10/89
TIME: 11:16 AM

	PASSENGER CARS						TRUCKS					
	ALL		INDIANA		NON-INDIANA		ALL		<5000 LBS.		>5000 LBS.	
OBSERVATION	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT
NUMBER OF VEHICLES	242	230	144	100	98	130	219	229	93	147	126	82
AVE. SPEED (MPH)	65.44	66.84	64.74	66.40	66.46	67.18	62.62	64.07	63.98	65.30	61.61	61.85
STANDARD DEVIATION	4.883	4.645	4.665	4.603	5.038	4.666	4.444	4.767	4.814	4.853	3.872	3.716
24 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
29 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
34 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
39 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
PERCENT 44 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
OF 49 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
VEHICLES 54 MPH	2.1	0.9	2.1	2.0	2.0	0.	2.3	1.3	3.2	1.4	1.6	1.2
TRAVELING 59 MPH	11.6	5.7	13.9	8.0	8.2	3.8	25.1	19.7	17.2	14.3	31.0	29.3
LESS THAN 64 MPH	41.3	30.0	48.6	30.0	30.6	30.0	65.3	51.1	50.5	37.4	76.2	75.6
OR 69 MPH	81.8	70.0	84.0	73.0	78.6	67.7	95.0	85.2	89.2	78.2	99.2	97.6
EQUAL TO 74 MPH	97.1	96.1	97.9	98.0	95.9	94.6	99.1	98.7	98.9	98.0	99.2	100.0
79 MPH	99.2	99.6	100.0	100.0	98.0	99.2	100.0	100.0	100.0	100.0	100.0	100.0
84 MPH	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
89 MPH	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
DIRECTION: EB												
# OF VEHICLES	127	118	79	52	48	66	106	115	41	74	65	41
AVERAGE SPEED	65.45	66.85	65.10	67.13	66.02	66.62	63.05	64.03	64.22	65.20	62.31	61.90
DIRECTION: WB												
# OF VEHICLES	115	112	65	48	50	64	113	114	52	73	61	41
AVERAGE SPEED	65.43	66.83	64.31	65.60	66.88	67.75	62.21	64.11	63.79	65.40	60.87	61.80

TABLE A5:SPEED DATA

STATION: RI-21 HIGHWAY: I-69 LOCATION: 1.6 MILES SOUTH OF SR 18, MILE MARKER 62.0

NO. OF LANES: 4 TYPE OF SURFACE: ASPHALT WEATHER: CLOUDY, BRIGHT

THIS OBSERVATION
DATE: 8/15/90
TIME: 12:17 PM

LAST PREVIOUS OBSERVATION (SPEED REPORT NO. 123)
DATE: 6/6/89
TIME: 11:35 AM

	PASSENGER CARS						TRUCKS					
	ALL		INDIANA		NON-INDIANA		ALL		<5000 LBS.		>5000 LBS.	
OBSERVATION	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT
NUMBER OF VEHICLES	250	232	164	135	86	97	218	236	106	128	112	108
AVE. SPEED (MPH)	65.80	66.72	65.59	66.63	66.21	66.86	62.67	63.86	64.66	65.42	60.78	62.01
STANDARD DEVIATION	4.220	4.430	4.187	4.186	4.276	4.768	5.143	5.108	5.697	5.599	3.690	3.705
24 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
29 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
34 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
39 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
PERCENT 44 MPH	0.	0.	0.	0.	0.	0.	0.5	0.4	0.9	0.8	0.	0.
OF 49 MPH	0.	0.4	0.	0.7	0.	0.	0.5	0.8	0.9	1.6	0.	0.
VEHICLES 54 MPH	2.4	1.3	3.0	0.7	1.2	2.1	4.1	2.1	4.7	3.9	3.6	0.
TRAVELING 59 MPH	6.8	6.0	6.1	7.4	8.1	4.1	28.9	16.5	17.0	10.2	40.2	24.1
LESS THAN 64 MPH	29.2	26.3	31.1	25.9	25.6	26.8	64.7	56.8	40.6	43.8	87.5	72.2
OR 69 MPH	82.4	76.3	83.5	76.3	80.2	76.3	89.9	87.3	81.1	77.3	98.2	99.1
EQUAL TO 74 MPH	99.2	98.3	99.4	98.5	98.8	97.9	99.1	97.5	98.1	95.3	100.0	100.0
79 MPH	100.0	99.1	100.0	100.0	100.0	97.9	100.0	99.6	100.0	99.2	100.0	100.0
84 MPH	100.0	99.6	100.0	100.0	100.0	99.0	100.0	99.6	100.0	99.2	100.0	100.0
89 MPH	100.0	99.6	100.0	100.0	100.0	99.0	100.0	100.0	100.0	100.0	100.0	100.0
DIRECTION: NB												
# OF VEHICLES	129	112	74	69	55	43	103	123	48	66	55	57
AVERAGE SPEED	66.56	66.87	66.54	66.59	66.58	67.30	63.00	64.44	65.27	66.20	61.02	62.40
DIRECTION: SB												
# OF VEHICLES	121	120	90	66	31	54	115	113	58	62	57	51
AVERAGE SPEED	65.00	66.59	64.81	66.67	65.55	66.50	62.37	63.23	64.15	64.60	60.54	61.57

TABLE A6:SPEED DATA

STATION: RI-34 HIGHWAY: I-65 LOCATION: 2.0 MILES SOUTH OF SR 39, MILE MARKER 135.0

NO. OF LANES: 4 TYPE OF SURFACE: ASPHALT WEATHER: CLOUDY, BRIGHT

THIS OBSERVATION
DATE: 5/1/90
TIME: 11:00 AM

LAST PREVIOUS OBSERVATION (SPEED REPORT NO. 123)
DATE: 5/16/89
TIME: 9:39 AM

	PASSENGER CARS						TRUCKS					
	ALL		INDIANA		NON-INDIANA		ALL		<5000 LBS.		>5000 LBS.	
OBSERVATION	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT
NUMBER OF VEHICLES	257	262	168	139	89	123	219	210	108	114	111	96
AVE. SPEED (MPH)	65.34	66.82	64.76	66.11	66.44	67.63	62.78	64.43	63.97	65.04	61.63	63.72
STANDARD DEVIATION	4.652	4.625	4.647	4.565	4.485	4.578	4.159	4.144	4.186	4.956	3.809	2.759
24 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
29 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
34 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
39 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
PERCENT 44 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
OF 49 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
VEHICLES 54 MPH	0.8	1.5	1.2	1.4	0.	1.6	1.4	1.4	1.9	2.6	0.9	0.
TRAVELING 59 MPH	8.9	5.3	11.3	7.2	4.5	3.3	21.9	8.6	16.7	13.2	27.0	3.1
LESS THAN 64 MPH	40.1	28.2	45.2	35.3	30.3	20.3	63.0	53.8	50.0	44.7	75.7	64.6
OR 69 MPH	84.4	74.8	87.5	81.3	78.7	67.5	93.6	89.5	88.9	82.5	98.2	97.9
EQUAL TO 74 MPH	96.9	95.4	98.8	96.4	93.3	94.3	100.0	98.1	100.0	96.5	100.0	100.0
79 MPH	99.6	99.6	99.4	100.0	100.0	99.2	100.0	100.0	100.0	100.0	100.0	100.0
84 MPH	99.6	100.0	99.4	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
89 MPH	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
DIRECTION: NB												
# OF VEHICLES	133	127	82	74	51	53	112	109	61	53	51	56
AVERAGE SPEED	65.41	66.42	65.00	65.84	66.08	67.23	63.08	63.83	64.07	64.74	61.90	62.98
DIRECTION: SB												
# OF VEHICLES	124	135	86	65	38	70	107	101	47	61	60	40
AVERAGE SPEED	65.27	67.20	64.54	66.42	66.92	67.93	62.48	65.08	63.85	65.30	61.40	64.75

TABLE A7:SPEED DATA

STATION: 4L-17 HIGHWAY: US 52 LOCATION: 2.0 MILES EAST OF US 231

NO. OF LANES: 4 TYPE OF SURFACE: ASPHALT WEATHER: CLEAR, SUNNY

THIS OBSERVATION
DATE: 5/30/90
TIME: 10:30 AM

LAST PREVIOUS OBSERVATION (SPEED REPORT NO. 123)
DATE: 5/12/89
TIME: 10:10 AM

	PASSENGER CARS						TRUCKS					
	ALL		INDIANA		NON-INDIANA		ALL		<5000 LBS.		>5000 LBS.	
OBSERVATION	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT
NUMBER OF VEHICLES	250	242	224	208	26	34	202	208	133	131	69	77
AVE. SPEED (MPH)	58.35	58.80	58.29	58.98	58.85	57.71	57.15	57.40	57.73	57.50	56.03	57.22
STANDARD DEVIATION	4.922	5.302	4.880	5.227	5.349	5.697	5.531	5.116	5.523	5.581	5.412	4.238
24 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
29 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
34 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
39 MPH	0.	0.4	0.	0.	0.	2.9	0.	0.5	0.	0.8	0.	0.
PERCENT 44 MPH	0.8	0.4	0.9	0.	0.	2.9	2.5	1.9	2.3	2.3	2.9	1.3
OF 49 MPH	3.2	4.1	3.1	3.4	3.8	8.8	8.9	5.8	7.5	8.4	11.6	1.3
VEHICLES 54 MPH	20.4	18.2	20.1	17.3	23.1	23.5	29.2	24.0	25.6	22.9	36.2	26.0
TRAVELING 59 MPH	60.8	59.5	61.6	58.7	53.8	64.7	65.8	67.3	60.2	65.6	76.8	70.1
LESS THAN 64 MPH	89.6	86.8	90.2	86.1	84.6	91.2	91.6	93.8	90.2	91.6	94.2	97.4
OR 69 MPH	100.0	97.1	100.0	96.6	100.0	100.0	99.0	100.0	98.5	100.0	100.0	100.0
EQUAL TO 74 MPH	100.0	99.6	100.0	99.5	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
79 MPH	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
84 MPH	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
89 MPH	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
DIRECTION: EB												
# OF VEHICLES	136	108	119	95	17	13	90	113	60	69	30	44
AVERAGE SPEED	58.96	58.34	58.87	58.32	59.65	58.54	57.83	57.11	58.22	57.32	57.07	56.77
DIRECTION: WB												
# OF VEHICLES	114	134	105	113	9	21	112	95	73	62	39	33
AVERAGE SPEED	57.61	59.17	57.64	59.54	57.33	57.19	56.60	57.75	57.33	57.71	55.23	57.82

TABLE A8:SPEED DATA

STATION: 4L-20 HIGHWAY: US 41 LOCATION: 1.0 MILE NORTH OF SR 2

NO. OF LANES: 4 TYPE OF SURFACE: ASPHALT WEATHER: SUNNY, CLEAR

THIS OBSERVATION
DATE: 6/25/90
TIME: 10:56 AM

LAST PREVIOUS OBSERVATION (SPEED REPORT NO. 123)
DATE: 7/17/89
TIME: 10:49 AM

	PASSENGER CARS						TRUCKS					
	ALL		INDIANA		NON-INDIANA		ALL		<5000 LBS.		>5000 LBS.	
OBSERVATION	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT
NUMBER OF VEHICLES	247	252	175	181	72	71	256	220	120	122	136	98
AVE. SPEED (MPH)	60.51	59.93	60.13	59.59	61.44	60.80	58.93	59.81	59.07	60.22	58.81	59.30
STANDARD DEVIATION	5.924	6.164	5.534	6.193	6.728	6.044	4.949	5.039	5.409	5.236	4.521	4.759
24 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
29 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
34 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
39 MPH	0.	0.4	0.	0.6	0.	0.	0.	0.	0.	0.	0.	0.
PERCENT 44 MPH	0.8	1.2	1.1	1.7	0.	0.	0.4	0.	0.8	0.	0.	0.
OF 49 MPH	2.8	3.6	3.4	4.4	1.4	1.4	3.5	1.8	3.3	0.8	3.7	3.1
VEHICLES 54 MPH	14.2	17.1	14.3	17.7	13.9	15.5	17.2	14.1	19.2	14.8	15.4	13.3
TRAVELING 59 MPH	42.1	47.2	43.4	49.2	38.9	42.3	55.5	50.5	51.7	47.5	58.8	54.1
LESS THAN 64 MPH	78.5	75.8	81.1	77.9	72.2	70.4	87.1	84.5	83.3	82.0	90.4	87.8
OR 69 MPH	94.3	94.0	95.4	95.0	91.7	91.5	98.4	96.4	97.5	95.1	99.3	98.0
EQUAL TO 74 MPH	98.4	99.2	99.4	99.4	95.8	98.6	100.0	99.1	100.0	98.4	100.0	100.0
79 MPH	99.2	100.0	100.0	100.0	97.2	100.0	100.0	100.0	100.0	100.0	100.0	100.0
84 MPH	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
89 MPH	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
DIRECTION: NB												
# OF VEHICLES	125	126	89	91	36	35	127	113	68	64	59	49
AVERAGE SPEED	61.53	59.79	61.01	59.51	62.81	60.51	58.26	59.83	58.71	60.48	57.75	58.98
DIRECTION: SB												
# OF VEHICLES	122	126	86	90	36	36	129	107	52	58	77	49
AVERAGE SPEED	59.47	60.07	59.21	59.67	60.08	61.08	59.59	59.79	59.54	59.93	59.62	59.61

TABLE A9:SPEED DATA

STATION: 4L-21 HIGHWAY: US 31 LOCATION: 0.8 MILE NORTH OF SR 38

NO. OF LANES: 4 TYPE OF SURFACE: ASPHALT WEATHER: CLOUDY, BRIGHT

THIS OBSERVATION
DATE: 7/10/90
TIME: 11:25 AM

LAST PREVIOUS OBSERVATION (SPEED REPORT NO. 123)
DATE: 5/7/89
TIME: 10:31 AM

	PASSENGER CARS						TRUCKS					
	ALL		INDIANA		NON-INDIANA		ALL		<5000 LBS.		>5000 LBS.	
OBSERVATION	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT
NUMBER OF VEHICLES	286	285	231	238	55	47	180	191	105	124	75	67
AVE. SPEED (MPH)	59.85	60.97	60.06	60.81	58.98	61.79	58.79	59.45	59.48	61.10	57.84	56.40
STANDARD DEVIATION	3.864	4.723	3.860	4.825	3.793	4.123	4.236	5.344	3.979	5.161	4.424	4.246
24 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
29 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
34 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
39 MPH	0.	0.4	0.	0.4	0.	0.	0.	0.	0.	0.	0.	0.
PERCENT 44 MPH	0.	0.4	0.	0.4	0.	0.	0.	0.5	0.	0.8	0.	0.
OF 49 MPH	0.3	1.4	0.4	1.7	0.	0.	2.8	4.2	1.0	2.4	5.3	7.5
VEHICLES 54 MPH	8.4	7.4	7.4	8.0	12.7	4.3	13.9	17.3	10.5	8.9	18.7	32.8
TRAVELING 59 MPH	45.8	35.4	42.4	37.4	60.0	25.5	54.4	48.2	48.6	33.9	62.7	74.6
LESS THAN 64 MPH	89.5	80.4	88.3	81.5	94.5	74.5	92.8	84.3	92.4	75.8	93.3	100.0
OR 69 MPH	98.6	96.1	98.3	96.6	100.0	93.6	100.0	96.9	100.0	95.2	100.0	100.0
EQUAL TO 74 MPH	100.0	99.3	100.0	99.2	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
79 MPH	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
84 MPH	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
89 MPH	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
DIRECTION: NB												
# OF VEHICLES	146	138	116	114	30	24	86	106	52	67	34	39
AVERAGE SPEED	59.72	60.75	59.97	60.46	58.77	62.17	58.45	58.48	59.37	60.51	57.06	55.00
DIRECTION: SB												
# OF VEHICLES	140	147	115	124	25	23	94	85	53	57	41	28
AVERAGE SPEED	59.99	61.18	60.16	61.14	59.24	61.39	59.11	60.66	59.58	61.79	58.49	58.36

TABLE A10:SPEED DATA

STATION: 4L-32 HIGHWAY: US 30 LOCATION: 3.7 MILES WEST OF US 421

NO. OF LANES: 4 TYPE OF SURFACE: ASPHALT WEATHER: CLOUDY, BRIGHT

THIS OBSERVATION
DATE: 9/16/90
TIME: 11:50 AM

LAST PREVIOUS OBSERVATION (SPEED REPORT NO. 123)
DATE: 8/17/89
TIME: 12:44 PM

	PASSENGER CARS						TRUCKS					
	ALL		INDIANA		NON-INDIANA		ALL		<5000 LBS.		>5000 LBS.	
OBSERVATION	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT
NUMBER OF VEHICLES	228	222	168	155	60	67	258	253	137	97	121	156
AVE. SPEED (MPH)	59.91	60.30	59.50	59.77	61.05	61.52	59.27	59.30	59.15	59.23	59.41	59.35
STANDARD DEVIATION	4.506	4.846	4.731	5.013	3.600	4.222	4.559	4.127	5.335	4.842	3.494	3.628
24 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
29 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
34 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
39 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
PERCENT 44 MPH	0.	0.	0.	0.	0.	0.	0.8	0.4	1.5	1.0	0.	0.
OF 49 MPH	2.6	0.5	3.6	0.6	0.	0.	2.3	1.2	4.4	3.1	0.	0.
VEHICLES 54 MPH	10.5	10.4	13.1	13.5	3.3	3.0	12.4	11.5	15.3	13.4	9.1	10.3
TRAVELING 59 MPH	46.5	44.1	48.8	49.7	40.0	31.3	50.8	51.0	53.3	51.5	47.9	50.6
LESS THAN 64 MPH	86.8	83.3	88.1	85.8	83.3	77.6	89.9	89.3	86.9	85.6	93.4	91.7
OR 69 MPH	98.7	96.4	99.4	96.1	96.7	97.0	99.2	100.0	98.5	100.0	100.0	100.0
EQUAL TO 74 MPH	100.0	99.5	100.0	99.4	100.0	100.0	99.6	100.0	99.3	100.0	100.0	100.0
79 MPH	100.0	99.5	100.0	99.4	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
84 MPH	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
89 MPH	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
DIRECTION: EB												
# OF VEHICLES	125	109	97	78	28	31	123	131	78	59	45	72
AVERAGE SPEED	59.98	60.56	59.77	59.95	60.71	62.10	59.19	59.81	59.23	59.92	59.11	59.72
DIRECTION: WB												
# OF VEHICLES	103	113	71	77	32	36	135	122	59	38	76	84
AVERAGE SPEED	59.82	60.04	59.13	59.58	61.34	61.03	59.35	58.76	59.03	58.16	59.59	59.04

TABLE A11:SPEED DATA

STATION: 2L-18 HIGHWAY: SR 28 LOCATION: 1.9 MILES EAST OF I-69

NO. OF LANES: 2 TYPE OF SURFACE: ASPHALT WEATHER: CLOUDY, BRIGHT

THIS OBSERVATION
DATE: 8/15/90
TIME: 2:51 PM

LAST PREVIOUS OBSERVATION (SPEED REPORT NO. 123)
DATE: 6/28/89
TIME: 11:29 AM

	PASSENGER CARS						TRUCKS					
	ALL		INDIANA		NON-INDIANA		ALL		<5000 LBS.		>5000 LBS.	
OBSERVATION	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT
NUMBER OF VEHICLES	251	244	218	211	33	33	225	241	126	160	99	81
AVE. SPEED (MPH)	58.08	58.61	57.98	58.41	58.79	59.88	56.25	57.31	57.07	58.61	55.21	54.73
STANDARD DEVIATION	4.596	5.023	4.706	4.939	3.781	5.441	4.601	5.279	4.785	5.108	4.151	4.650
24 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
29 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
34 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
39 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
PERCENT 44 MPH	0.4	0.8	0.5	0.9	0.	0.	0.4	0.8	0.8	0.6	0.	1.2
OF 49 MPH	2.0	2.9	2.3	3.3	0.	0.	8.0	5.8	6.3	1.3	10.1	14.8
VEHICLES 54 MPH	19.9	18.9	21.1	19.4	12.1	15.2	30.7	31.1	24.6	21.9	38.4	49.4
TRAVELING 59 MPH	65.3	59.8	65.1	62.1	66.7	45.5	80.4	66.4	73.8	58.1	88.9	82.7
LESS THAN 64 MPH	91.6	89.8	91.3	91.5	93.9	78.8	94.7	93.4	92.1	90.6	98.0	98.8
OR 69 MPH	98.0	97.1	98.2	97.2	97.0	97.0	100.0	99.2	100.0	98.8	100.0	100.0
EQUAL TO 74 MPH	100.0	99.6	100.0	99.5	100.0	100.0	100.0	99.6	100.0	99.4	100.0	100.0
79 MPH	100.0	100.0	100.0	100.0	100.0	100.0	100.0	99.6	100.0	99.4	100.0	100.0
84 MPH	100.0	100.0	100.0	100.0	100.0	100.0	100.0	99.6	100.0	99.4	100.0	100.0
89 MPH	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
DIRECTION: EB												
# OF VEHICLES	107	112	96	101	11	11	116	114	63	74	53	40
AVERAGE SPEED	57.45	57.57	57.24	57.42	59.27	59.00	55.13	55.99	56.32	57.20	53.72	53.75
DIRECTION: WB												
# OF VEHICLES	144	132	122	110	22	22	109	127	63	86	46	41
AVERAGE SPEED	58.56	59.49	58.56	59.33	58.54	60.32	57.45	58.49	57.83	59.83	56.94	55.68

TABLE A12:SPEED DATA

STATION: 2L-54 HIGHWAY: US 231 LOCATION: 1.1 MILES SOUTH OF SR 234

NO. OF LANES: 2 TYPE OF SURFACE: ASPHALT WEATHER: CLEAR, SUNNY

THIS OBSERVATION
DATE: 7/9/90
TIME: 11:14 AM

LAST PREVIOUS OBSERVATION (SPEED REPORT NO. 123)
DATE: 7/19/89
TIME: 1:39 PM

	PASSENGER CARS						TRUCKS					
	ALL		INDIANA		NON-INDIANA		ALL		<5000 LBS.		>5000 LBS.	
OBSERVATION	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT
NUMBER OF VEHICLES	224	236	192	214	32	22	205	205	152	151	53	54
AVE. SPEED (MPH)	58.28	58.92	58.08	58.85	59.50	59.59	57.77	58.15	58.07	58.60	56.92	56.91
STANDARD DEVIATION	5.208	4.658	5.358	4.696	4.056	4.317	5.689	5.507	5.991	5.779	4.665	4.477
24 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
29 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
34 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
39 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
PERCENT 44 MPH	0.4	0.	0.5	0.	0.	0.	1.5	1.0	2.0	1.3	0.	0.
OF 49 MPH	4.0	2.1	4.7	2.3	0.	0.	5.9	5.4	5.9	5.3	5.7	5.6
VEHICLES 54 MPH	23.2	15.3	27.1	15.9	0.	9.1	23.9	22.4	23.0	22.5	26.4	22.2
TRAVELING 59 MPH	63.4	56.4	64.6	56.5	56.3	54.5	68.8	65.9	65.8	60.9	77.4	79.6
LESS THAN 64 MPH	87.5	87.3	86.5	87.4	93.8	86.4	88.3	88.3	85.5	85.4	96.2	96.3
OR 69 MPH	98.7	97.9	99.0	98.1	96.9	95.5	96.6	97.1	96.1	96.0	98.1	100.0
EQUAL TO 74 MPH	99.1	100.0	99.5	100.0	96.9	100.0	99.5	99.5	99.3	99.3	100.0	100.0
79 MPH	99.6	100.0	99.5	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
84 MPH	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
89 MPH	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
DIRECTION: NB												
# OF VEHICLES	104	119	86	108	18	11	114	103	82	75	32	28
AVERAGE SPEED	57.92	59.14	57.81	58.97	58.44	60.82	57.85	57.88	58.26	58.24	56.81	56.93
DIRECTION: SB												
# OF VEHICLES	120	117	106	106	14	11	91	102	70	76	21	26
AVERAGE SPEED	58.59	58.69	58.29	58.73	60.86	58.36	57.67	58.42	57.84	58.95	57.10	56.88

TABLE A13:SPEED DATA

STATION: 2L-79 HIGHWAY: SR 25 LOCATION: 0.7 MILE SOUTH OF AMERICUS

NO. OF LANES: 2 TYPE OF SURFACE: ASPHALT WEATHER: BRIGHT, CLOUDY

THIS OBSERVATION
DATE: 6/26/90
TIME: 10:30 AM

LAST PREVIOUS OBSERVATION (SPEED REPORT NO. 123)
DATE: 5/11/89
TIME: 10:05 AM

	PASSENGER CARS						TRUCKS					
	ALL		INDIANA		NON-INDIANA		ALL		<5000 LBS.		>5000 LBS.	
OBSERVATION	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT
NUMBER OF VEHICLES	256	253	231	223	25	30	198	232	120	143	78	89
AVE. SPEED (MPH)	58.09	57.50	58.10	57.57	58.00	57.00	57.20	56.54	57.83	57.08	56.24	55.66
STANDARD DEVIATION	4.353	3.815	4.422	3.802	3.731	3.939	4.335	4.619	4.277	4.910	4.274	3.980
24 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
29 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
34 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
39 MPH	0.	0.	0.	0.	0.	0.	0.	0.4	0.	0.7	0.	0.
PERCENT 44 MPH	0.	0.	0.	0.	0.	0.	0.5	0.9	0.	0.7	1.3	1.1
OF 49 MPH	1.6	2.4	1.3	2.7	4.0	0.	5.1	4.7	2.5	4.9	9.0	4.5
VEHICLES 54 MPH	18.0	16.6	18.6	15.7	12.0	23.3	22.2	31.9	19.2	26.6	26.9	40.4
TRAVELING 59 MPH	64.5	73.1	64.1	72.6	68.0	76.7	70.7	76.7	65.0	69.9	79.5	87.6
LESS THAN 64 MPH	93.8	95.7	93.1	95.5	100.0	96.7	97.0	96.1	95.8	95.1	98.7	97.8
OR 69 MPH	99.2	99.6	99.1	99.6	100.0	100.0	100.0	99.6	100.0	99.3	100.0	100.0
EQUAL TO 74 MPH	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
79 MPH	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
84 MPH	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
89 MPH	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
DIRECTION: NB												
# OF VEHICLES	123	125	108	107	15	18	98	125	51	81	47	44
AVERAGE SPEED	58.13	57.33	58.06	57.42	58.67	56.78	56.76	56.69	57.65	57.09	55.81	55.95
DIRECTION: SB												
# OF VEHICLES	133	128	123	116	10	12	100	107	69	62	31	45
AVERAGE SPEED	58.05	57.66	58.14	57.70	57.00	57.33	57.63	56.36	57.96	57.08	56.90	55.38

TABLE A14:SPEED DATA

STATION: 2L-91 HIGHWAY: SR 43 LOCATION: 2.0 MILES SOUTH OF CHALMERS

NO. OF LANES: 2 TYPE OF SURFACE: ASPHALT WEATHER: CLOUDY, BRIGHT

THIS OBSERVATION
DATE: 8/13/90
TIME: 11:00 AM

LAST PREVIOUS OBSERVATION (SPEED REPORT NO. 123)
DATE: 8/16/89
TIME: 10:03 AM

	PASSENGER CARS						TRUCKS					
	ALL		INDIANA		NON-INDIANA		ALL		<5000 LBS.		>5000 LBS.	
OBSERVATION	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT
NUMBER OF VEHICLES	262	279	228	249	34	30	223	215	142	126	81	89
AVE. SPEED (MPH)	60.15	59.63	60.11	59.73	60.41	58.80	58.98	58.12	59.49	58.49	58.09	57.60
STANDARD DEVIATION	5.021	5.261	5.079	5.416	4.672	3.699	4.023	4.468	4.042	4.661	3.854	4.150
24 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
29 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
34 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
39 MPH	0.4	0.	0.4	0.	0.	0.	0.	0.	0.	0.	0.	0.
PERCENT 44 MPH	0.4	0.7	0.4	0.8	0.	0.	0.	0.	0.	0.	0.	0.
OF 49 MPH	1.5	1.1	1.8	1.2	0.	0.	0.	2.3	0.	0.8	0.	4.5
VEHICLES 54 MPH	8.8	13.6	9.6	13.7	2.9	13.3	13.9	20.0	12.0	19.8	17.3	20.2
TRAVELING 59 MPH	47.3	53.4	46.5	51.8	52.9	66.7	55.2	62.8	46.5	61.9	70.4	64.0
LESS THAN 64 MPH	85.1	84.6	84.2	83.5	91.2	93.3	91.5	92.1	91.5	89.7	91.4	95.5
OR 69 MPH	94.7	95.3	94.7	95.2	94.1	96.7	98.7	99.1	97.9	98.4	100.0	100.0
EQUAL TO 74 MPH	98.9	98.9	99.1	98.8	97.1	100.0	99.6	100.0	99.3	100.0	100.0	100.0
79 MPH	100.0	99.6	100.0	99.6	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
84 MPH	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
89 MPH	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
DIRECTION: NB												
# OF VEHICLES	117	144	100	128	17	16	124	119	78	71	46	48
AVERAGE SPEED	59.54	58.72	59.57	58.72	59.35	58.69	58.60	57.10	58.95	57.14	58.00	57.04
DIRECTION: SB												
# OF VEHICLES	145	135	128	121	17	14	99	96	64	55	35	41
AVERAGE SPEED	60.64	60.60	60.53	60.79	61.47	58.93	59.46	59.39	60.14	60.24	58.20	58.24

TABLE A15:SPEED DATA

STATION: UI-ALL HIGHWAY: URBAN INTERSTATE

THIS OBSERVATION
DATE: MAY TO JUNE 1990

LAST PREVIOUS OBSERVATION (SPEED REPORT NO. 123)
DATE: MAY TO JUNE 1989

	PASSENGER CARS						TRUCKS					
	ALL		INDIANA		NON-INDIANA		ALL		<5000 LBS.		>5000 LBS.	
OBSERVATION	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT
NUMBER OF VEHICLES	525	544	299	319	226	225	415	404	193	207	222	197
AVE. SPEED (MPH)	62.28	62.69	61.63	62.51	63.15	62.96	60.44	60.72	60.72	61.45	60.19	59.94
STANDARD DEVIATION	5.298	5.038	5.409	5.143	5.030	4.885	4.478	4.826	5.316	5.061	3.589	4.448
24 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
29 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
34 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
39 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
PERCENT 44 MPH	0.	0.2	0.	0.3	0.	0.	0.	0.2	0.	0.	0.	0.5
OF 49 MPH	0.4	0.6	0.7	0.6	0.	0.4	1.4	1.5	3.1	1.0	0.	2.0
VEHICLES 54 MPH	6.3	3.3	8.4	3.4	3.5	3.1	8.0	7.2	10.9	6.3	5.4	8.1
TRAVELING 59 MPH	30.3	27.6	36.1	28.8	22.6	25.8	42.4	40.1	40.9	38.6	43.7	41.6
LESS THAN 64 MPH	66.9	67.3	70.2	70.2	62.4	63.1	82.7	80.7	75.6	74.9	88.7	86.8
OR 69 MPH	92.6	92.8	93.6	92.5	91.2	93.3	97.6	95.8	95.3	92.3	99.5	99.5
EQUAL TO 74 MPH	98.5	98.0	98.7	98.1	98.2	97.8	99.8	100.0	99.5	100.0	100.0	100.0
79 MPH	99.4	99.4	99.3	99.1	99.6	100.0	99.8	100.0	99.5	100.0	100.0	100.0
84 MPH	99.6	99.8	99.7	99.7	99.6	100.0	100.0	100.0	100.0	100.0	100.0	100.0
89 MPH	100.0	99.8	100.0	99.7	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

TABLE A16:SPEED DATA

STATION: RI-ALL HIGHWAY: RURAL INTERSTATE

THIS OBSERVATION
DATE: MAY TO AUGUST 1990

LAST PREVIOUS OBSERVATION (SPEED REPORT NO. 123)
DATE: MAY TO AUGUST 1989

		PASSENGER CARS						TRUCKS					
		ALL		INDIANA		NON-INDIANA		ALL		<5000 LBS.		>5000 LBS.	
OBSERVATION		LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT
NUMBER OF VEHICLES		965	965	566	521	399	444	906	895	409	505	497	390
AVE. SPEED (MPH)		65.69	66.70	65.15	66.22	66.47	67.27	62.93	63.94	64.33	65.03	61.78	62.52
STANDARD DEVIATION		4.624	4.703	4.459	4.586	4.748	4.780	4.762	4.728	5.079	5.172	4.151	3.626
	24 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	29 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	34 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	39 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
PERCENT	44 MPH	0.	0.	0.	0.	0.	0.	0.1	0.1	0.2	0.2	0.	0.
OF	49 MPH	0.	0.1	0.	0.2	0.	0.	0.2	0.2	0.2	0.4	0.2	0.
VEHICLES	54 MPH	1.6	1.5	1.9	1.3	1.0	1.6	2.5	1.7	3.4	2.6	1.8	0.5
TRAVELING	59 MPH	8.4	6.2	10.1	7.9	6.0	4.3	24.3	17.7	17.4	14.9	30.0	21.3
LESS THAN	64 MPH	36.3	28.7	40.3	31.7	30.6	25.2	61.9	55.0	46.0	43.4	75.1	70.0
OR	69 MPH	81.9	73.5	84.8	77.7	77.7	68.5	91.2	88.4	84.4	80.8	96.8	98.2
EQUAL TO	74 MPH	97.1	96.1	98.8	97.3	94.7	94.6	99.2	98.2	99.0	97.0	99.4	99.7
	79 MPH	99.5	99.5	99.8	100.0	99.0	98.9	100.0	99.8	100.0	99.6	100.0	100.0
	84 MPH	99.8	99.9	99.8	100.0	99.7	99.8	100.0	99.9	100.0	99.8	100.0	100.0
	89 MPH	100.0	99.9	100.0	100.0	100.0	99.8	100.0	100.0	100.0	100.0	100.0	100.0

TABLE A17:SPEED DATA

STATION: 4L-ALL HIGHWAY: 4-LANE

THIS OBSERVATION
DATE: MAY TO AUGUST 1990

LAST PREVIOUS OBSERVATION (SPEED REPORT NO. 123)
DATE: MAY TO AUGUST 1989

		PASSENGER CARS						TRUCKS					
		ALL		INDIANA		NON-INDIANA		ALL		<5000 LBS.		>5000 LBS.	
OBSERVATION		LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT
NUMBER OF VEHICLES		1011	1001	798	782	213	219	896	872	495	474	401	398
AVE. SPEED (MPH)		59.65	60.03	59.46	59.83	60.38	60.75	58.60	59.01	58.82	59.50	58.33	58.43
STANDARD DEVIATION		4.891	5.336	4.788	5.348	5.207	5.243	4.904	4.961	5.179	5.402	4.533	4.313
	24 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	29 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	34 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	39 MPH	0.	0.3	0.	0.3	0.	0.5	0.	0.1	0.	0.2	0.	0.
PERCENT	44 MPH	0.4	0.5	0.5	0.5	0.	0.5	0.9	0.7	1.2	1.1	0.5	0.3
OF	49 MPH	2.2	2.4	2.5	2.6	0.9	1.8	4.2	3.1	4.2	3.8	4.2	2.3
VEHICLES	54 MPH	13.3	13.1	13.7	13.8	11.7	10.5	17.9	16.4	18.0	15.2	17.7	17.8
TRAVELING	59 MPH	48.8	46.2	49.4	48.2	46.5	38.8	56.3	54.1	53.7	49.8	59.4	59.3
LESS THAN	64 MPH	86.3	81.4	87.2	82.7	82.6	76.7	90.1	88.1	88.1	83.8	92.5	93.2
OR	69 MPH	97.9	95.9	98.4	96.2	96.2	95.0	99.1	98.4	98.6	97.5	99.8	99.5
EQUAL TO	74 MPH	99.6	99.4	99.9	99.4	98.6	99.5	99.9	99.8	99.8	99.6	100.0	100.0
	79 MPH	99.8	99.9	100.0	99.9	99.1	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	84 MPH	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	89 MPH	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

TABLE A18:SPEED DATA

STATION: 2L-ALL HIGHWAY: 2-LANE

THIS OBSERVATION
DATE: MAY TO AUGUST 1990

LAST PREVIOUS OBSERVATION (SPEED REPORT NO. 123)
DATE: MAY TO AUGUST 1989

	PASSENGER CARS						TRUCKS					
	ALL		INDIANA		NON-INDIANA		ALL		<5000 LBS.		>5000 LBS.	
OBSERVATION	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT
NUMBER OF VEHICLES	993	1012	869	897	124	115	851	893	540	580	311	313
AVE. SPEED (MPH)	58.67	58.68	58.59	58.67	59.26	58.79	57.55	57.50	58.15	58.21	56.51	56.19
STANDARD DEVIATION	4.869	4.792	4.960	4.827	4.147	4.526	4.790	5.019	4.944	5.180	4.325	4.423
24 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
29 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
34 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
39 MPH	0.1	0.	0.1	0.	0.	0.	0.	0.1	0.	0.2	0.	0.
PERCENT 44 MPH	0.3	0.4	0.3	0.4	0.	0.	0.6	0.7	0.7	0.7	0.3	0.6
OF 49 MPH	2.2	2.1	2.4	2.3	0.8	0.	4.7	4.6	3.7	3.1	6.4	7.3
VEHICLES 54 MPH	17.2	16.0	18.8	16.1	6.5	15.7	22.7	26.7	19.6	22.8	28.0	33.9
TRAVELING 59 MPH	59.9	60.6	59.8	60.5	60.5	60.9	68.7	68.1	62.4	62.6	79.7	78.3
LESS THAN 64 MPH	89.5	89.2	88.8	89.3	94.4	88.7	92.8	92.6	90.9	90.2	96.1	97.1
OR 69 MPH	97.6	97.4	97.7	97.4	96.8	97.4	98.8	98.8	98.3	98.1	99.7	100.0
EQUAL TO 74 MPH	99.5	99.6	99.7	99.6	98.4	100.0	99.8	99.8	99.6	99.7	100.0	100.0
79 MPH	99.9	99.9	99.9	99.9	100.0	100.0	100.0	99.9	100.0	99.8	100.0	100.0
84 MPH	100.0	100.0	100.0	100.0	100.0	100.0	100.0	99.9	100.0	99.8	100.0	100.0
89 MPH	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

TABLE A19:SPEED DATA

STATION: ALL-14 HIGHWAY: URBAN INTERSTATE
RURAL INTERSTATE
4-LANE
2-LANE

THIS OBSERVATION
DATE: MAY TO AUGUST 1990

LAST PREVIOUS OBSERVATION (SPEED REPORT NO. 123)
DATE: MAY TO AUGUST 1989

		PASSENGER CARS						TRUCKS					
		ALL		INDIANA		NON-INDIANA		ALL		<5000 LBS.		>5000 LBS.	
OBSERVATION		LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT
NUMBER OF VEHICLES		3494	3522	2532	2519	962	1003	3068	3064	1637	1766	1431	1298
AVE. SPEED (MPH)		61.44	61.88	60.69	61.08	63.41	63.91	59.84	60.23	60.20	60.88	59.42	59.35
STANDARD DEVIATION		5.654	5.918	5.484	5.755	5.621	5.842	5.249	5.529	5.671	5.923	4.688	4.804
PERCENT OF VEHICLES TRAVELING LESS THAN OR EQUAL TO	24 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	29 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	34 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	39 MPH	0.	0.1	0.	0.1	0.	0.1	0.	0.1	0.	0.1	0.	0.
	44 MPH	0.2	0.3	0.3	0.4	0.	0.1	0.5	0.5	0.7	0.6	0.2	0.3
	49 MPH	1.3	1.4	1.7	1.7	0.3	0.5	2.8	2.5	2.9	2.3	2.7	2.8
	54 MPH	10.1	9.2	12.2	10.7	4.7	5.5	13.3	13.9	14.1	13.0	12.5	15.0
	59 MPH	38.0	36.5	42.6	41.8	25.9	23.1	48.4	45.7	46.0	42.7	51.2	49.8
	64 MPH	70.5	67.0	75.3	72.9	57.8	52.2	81.5	78.8	77.0	73.3	86.7	86.2
	69 MPH	92.6	89.7	94.5	92.3	87.4	83.2	96.5	95.2	94.6	92.3	98.7	99.2
	74 MPH	98.7	98.3	99.4	98.8	96.9	97.0	99.6	99.3	99.5	98.9	99.8	99.9
	79 MPH	99.7	99.7	99.8	99.8	99.3	99.5	100.0	99.9	99.9	99.8	100.0	100.0
	84 MPH	99.9	99.9	99.9	100.0	99.8	99.9	100.0	99.9	100.0	99.9	100.0	100.0
	89 MPH	100.0	99.9	100.0	100.0	100.0	99.9	100.0	100.0	100.0	100.0	100.0	100.0

TABLE A20:SPEED DATA

STATION: RURALL HIGHWAY: RURAL INTERSTATE
4-LANE
2-LANE

THIS OBSERVATION
DATE: MAY TO AUGUST 1990

LAST PREVIOUS OBSERVATION (SPEED REPORT NO. 123)
DATE: MAY TO AUGUST 1989

	PASSENGER CARS						TRUCKS					
	ALL		INDIANA		NON-INDIANA		ALL		<5000 LBS.		>5000 LBS.	
OBSERVATION	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT	LAST	PRES-ENT
NUMBER OF VEHICLES	2969	2978	2233	2200	736	778	2653	2660	1444	1559	1209	1101
AVE. SPEED (MPH)	61.29	61.74	60.56	60.87	63.49	64.18	59.74	60.16	60.13	60.81	59.28	59.24
STANDARD DEVIATION	5.702	6.054	5.483	5.810	5.791	6.066	5.354	5.625	5.715	6.026	4.851	4.860
24 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
29 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
34 MPH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
39 MPH	0.	0.1	0.	0.1	0.	0.1	0.	0.1	0.	0.1	0.	0.
PERCENT 44 MPH	0.2	0.3	0.3	0.4	0.	0.1	0.5	0.5	0.8	0.6	0.2	0.3
OF 49 MPH	1.5	1.5	1.8	1.9	0.4	0.5	3.0	2.6	2.9	2.4	3.1	2.9
VEHICLES 54 MPH	10.8	10.3	12.7	11.8	5.0	6.2	14.2	14.9	14.5	13.9	13.8	16.3
TRAVELING 59 MPH	39.4	38.1	43.5	43.7	26.9	22.4	49.3	46.5	46.7	43.2	52.5	51.2
LESS THAN 64 MPH	71.1	67.0	76.0	73.3	56.4	49.1	81.3	78.5	77.2	73.1	86.3	86.1
OR 69 MPH	92.6	89.2	94.7	92.3	86.3	80.2	96.3	95.2	94.5	92.3	98.5	99.2
EQUAL TO 74 MPH	98.8	98.4	99.5	99.0	96.5	96.8	99.6	99.2	99.5	98.8	99.8	99.9
79 MPH	99.7	99.8	99.9	99.9	99.2	99.4	100.0	99.9	100.0	99.8	100.0	100.0
84 MPH	99.9	100.0	100.0	100.0	99.9	99.9	100.0	99.9	100.0	99.9	100.0	100.0
89 MPH	100.0	100.0	100.0	100.0	100.0	99.9	100.0	100.0	100.0	100.0	100.0	100.0

COVER DESIGN BY ALDO GIORGINI